

Access DB#

114317

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Anthony Green Examiner #: 65854 Date: 2/13/04  
Art Unit: 1755 Phone Number 30 2-1367 Serial Number: 09/976435  
Mail Box and Bldg/Room Location: 201 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc; if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

## STAFF USE ONLY

Searcher: K. Tucker

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: 2/18/04Searcher Prep & Review Time: 20

Clerical Prep Time: \_\_\_\_\_

Online Time: 50

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) 2

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN ☒

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

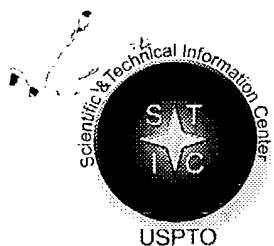
Dr.Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_



# **STIC Search Report**

## **EIC 1700**

**STIC Database Tracking Number: 114317**

**TO: Anthony Green**

**Location: rem 9c15**

**Art Unit : 1755**

**February 18, 2004**

**Case Serial Number: 09/976435**

**From: Kathleen Fuller**

**Location: EIC 1700**

**REMSEN 4B28**

**Phone: 571/272-2505**

**Kathleen.Fuller@uspto.gov**

### **Search Notes**



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



=> FILE RE

'RE' IS AN AMBIGUOUS FILE OR CLUSTER NAME

REACTION - Reactions Cluster  
RESEARCH - Research Cluster  
REGISTRY - The CAS Registry File of substances

ENTER FILE OR CLUSTER NAME (IGNORE):REG

FILE 'REGISTRY' ENTERED AT 11:22:47 ON 18 FEB 2004

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 17 FEB 2004 HIGHEST RN 651291-85-9

DICTIONARY FILE UPDATES: 17 FEB 2004 HIGHEST RN 651291-85-9

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 11:22:53 ON 18 FEB 2004

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FILE COVERS 1907 - 18 Feb 2004 VOL 140 ISS 8

FILE LAST UPDATED: 17 Feb 2004 (20040217/ED)

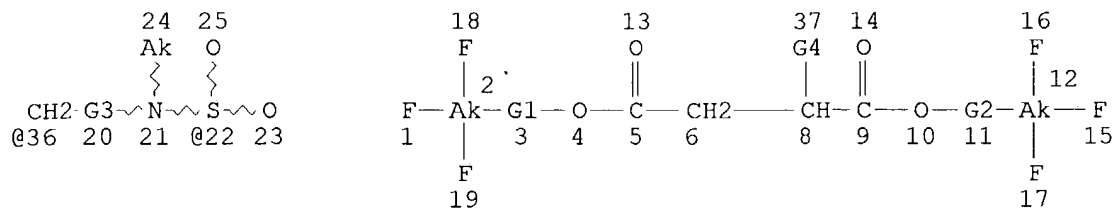
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L9

STR

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505



CH2:CH2 @27 @28 CH2:CH2:CH2 @29 30 @31 CH2:CH2:CH2:CH2 @32 33 34 @35 Ak @38

*251 structures from this query*

VAR G1=36-4 22-2/CH2/27-2 28-4/29-2 31-4/32-2 35-4  
 VAR G2=36-10 22-12/CH2/27-10 28-12/29-10 31-12/32-10 35-12  
 REP G3=(0-3) CH2  
 VAR G4=H/38

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 23  
 CONNECT IS E1 RC AT 25  
 CONNECT IS E1 RC AT 38  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS M2 C AT 2  
 ECOUNT IS M2 C AT 12

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 36

STEREO ATTRIBUTES: NONE

L11 251 SEA FILE=REGISTRY SSS FUL L9  
 L13 266 SEA FILE=HCAPLUS ABB=ON L11  
 L14 15 SEA FILE=HCAPLUS ABB=ON L13 AND (OIL# OR WATER? OR H2O) (3A) REP  
 ELL?  
 L15 14 SEA FILE=HCAPLUS ABB=ON L13 AND WATERPROOF?  
 L16 1 SEA FILE=HCAPLUS ABB=ON L13 AND WATER(W) PROOF?  
 L17 0 SEA FILE=HCAPLUS ABB=ON L13 AND (OIL(W) PROOF?)  
 L18 7 SEA FILE=HCAPLUS ABB=ON L13 AND (ANTISOIL? OR (SOIL? OR  
 STAIN? OR DIRT) (3A) (REPELL? OR REISIST? OR PROOF?))  
 L19 22 SEA FILE=HCAPLUS ABB=ON (L14 OR L15 OR L16 OR L17 OR L18)  
 L21 1 SEA FILE=HCAPLUS ABB=ON L13 AND PREVENT? (3A) SOIL?  
 L22 22 SEA FILE=HCAPLUS ABB=ON L19 OR L21  
 L23 9 SEA FILE=HCAPLUS ABB=ON L13 AND OILPROOF?  
 L24 23 SEA FILE=HCAPLUS ABB=ON L22 OR L23  
 L25 5 SEA FILE=HCAPLUS ABB=ON L13 AND (FIBER? OR FIBRE?) AND  
 COMPOSITION?  
 L26 23 SEA FILE=HCAPLUS ABB=ON L24 OR L25

*23 CA references on the utility*

=> D L26 ALL HITSTR 1-23

L26 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:592215 HCAPLUS  
 DN 137:141784  
 ED Entered STN: 09 Aug 2002

TI **Antisoiling** coating **compositions** and **fiber**  
products treated with them  
IN Maekawa, Takashige; Shindo, Minako; Seki, Takashi; Oharu, Kazuya; Furuta,  
Shoji  
PA Asahi Glass Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM D06M013-236  
ICS C08K005-00; C08L027-12; C08L033-16; C08L101-00; C09K003-00;  
D06M015-277; D06M015-295; D06M015-576  
CC 40-9 (Textiles and Fibers)  
Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002220781	A2	20020809	JP 2001-17403	20010125
PRAI	JP 2001-17403		20010125		
OS	MARPAT 137:141784				

AB The compns. contain Rf1XO2CACO2YRf2 (I; Rf1, Rf2 = C≤22  
perfluoroalkyl; X, Y = divalent organic group; A = C1-8 divalent org group).  
Thus, a nylon loop pile carpet was coated with an emulsion containing I (A = X  
= Y = CH2, Rf1 = Rf2 = mixture of C6F13, C8F17, C10F21, C12F25, and C14F29  
at molar ratio of 2:50:30:15:3), showing good **water** and  
**oil repellency** and **soil** resistance.

ST perfluoroalkyl butanedioate **antisoiling** coating nylon carpet;  
**water repellency** perfluoroalkyl butanedioate  
**antisoiling** coating **fiber**; **oil**  
**repellency** perfluoroalkyl butanedioate **antisoiling**  
coating **fiber**

IT Fluoropolymers, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(acrylic; **antisoiling** coating compns. for **fiber**  
products)

IT Coating materials  
(**antisoiling**, water-resistant; **antisoiling** coating  
compns. for **fiber** products)

IT Polyamide **fibers**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(carpets; **antisoiling** coating compns. for **fiber**  
products)

IT Coating materials  
(oil-resistant; **antisoiling** coating compns. for **fiber**  
products)

IT Carpets  
(pile; **antisoiling** coating compns. for)

IT 9011-14-7P, Methyl methacrylate homopolymer  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(**antisoiling** coating compns. for **fiber** products)

IT 112-92-5DP, Stearyl alcohol, reaction products with HDI trimer and  
perfluoroalkyl alcs. 647-42-7DP, reaction products with HDI trimer,  
perfluoroalkyl alcs., and stearyl alc. 678-39-7DP, reaction products  
with HDI trimer, perfluoroalkyl alcs., and stearyl alc. 865-86-1DP,  
reaction products with HDI trimer, perfluoroalkyl alcs., and stearyl alc.  
28574-90-5DP, Hexamethylene diisocyanate trimer, reaction products with

perfluoroalkyl alcs. and stearyl alc. 39239-77-5DP, reaction products with HDI trimer, perfluoroalkyl alcs., and stearyl alc. 60699-51-6DP, reaction products with HDI trimer, perfluoroalkyl alcs., and stearyl alc. 110539-63-4DP, Sumidur N 3200, reaction products with perfluoroalkyl alcs. and stearyl alc. 444890-32-8P 444890-33-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**antisoiling** coating compns. for **fiber** products)

IT 49676-48-4 261928-47-6 444890-28-2 444890-29-3

444890-30-6 444890-31-7

RL: TEM (Technical or engineered material use); USES (Uses)

(**antisoiling** coating compns. for **fiber** products)

IT 261928-47-6 444890-28-2 444890-29-3

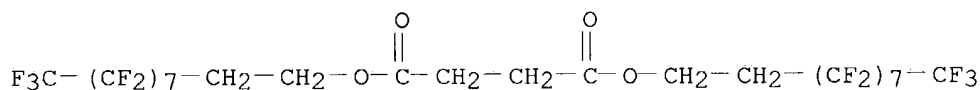
444890-30-6 444890-31-7

RL: TEM (Technical or engineered material use); USES (Uses)

(**antisoiling** coating compns. for **fiber** products)

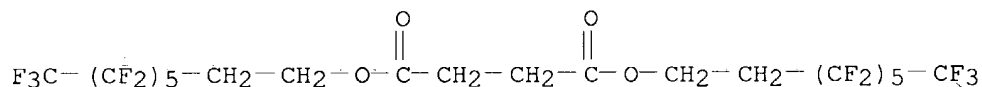
RN 261928-47-6 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester (9CI) (CA INDEX NAME)



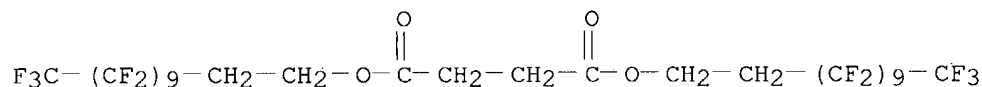
RN 444890-28-2 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) ester (9CI) (CA INDEX NAME)



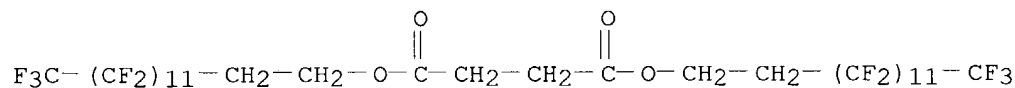
RN 444890-29-3 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl) ester (9CI) (CA INDEX NAME)



RN 444890-30-6 HCAPLUS

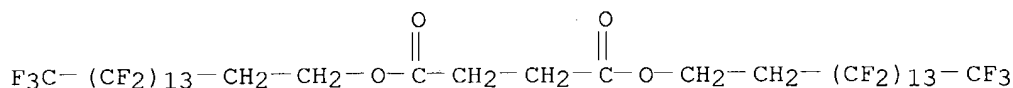
CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuorotetradecyl) ester (9CI) (CA INDEX NAME)



RN 444890-31-7 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,

14,14,15,15,16,16,16-nonacosafuorohexadecyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:661370 HCAPLUS

DN 135:212420

ED Entered STN: 10 Sep 2001

TI Fluorine compounds and **water-** and **oil-**  
**repellant** compositions containing them for **prevention of**  
**soiling** of a surface

IN Shindo, Minako; Maekawa, Takashige; Seki, Ryuji; Furuta, Shoji; Oharu,  
 Kazuya

PA Asahi Glass Company, Limited, Japan

SO PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM C07C069-63

ICS C07C311-24; C09K003-18

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001064619	A1	20010907	WO 2001-JP1425	20010226
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1174417	A1	20020123	EP 2001-906315	20010226
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2002060304	A1	20020523	US 2001-976435	20011015
PRAI	JP 2000-54069	A	20000229		
	WO 2001-JP1425	W	20010226		

OS MARPAT 135:212420

AB The compds. are of perfluorinated group-containing butanedioic acid esters, i.e.,  $\text{Rf}_1\text{R}_2\text{OCH}_2\text{CH}_2\text{R}_1\text{COOR}_3\text{Rf}_2\text{o}$  ( $\text{Rf}_1$ ,  $\text{Rf}_2$  = independently polyfluoroalkyl having 3 to 22 carbon atoms;  $\text{R}_1$  = H or C1-10 alkyl; and  $\text{R}_2$ ,  $\text{R}_3$  = independently C1-4 alkyl or the like). **Oil-** and **water**  
**-repellent** compns. containing the compds. have good precipitation resistance. Thus, heating  $\text{F}(\text{CF}_2)_8(\text{CH}_2)_2\text{OH}$  (94% purity) 278 with p-toluenesulfonic acid 1.5 and succinic acid 36.5 in PhMe 400 g at 107° for 12 h and working up gave an ester 30 g of which was combined with a perfluoro-C6-16 alkylethyl acrylate 167, stearyl acrylate 46.2, N-methylolacrylamide 5.1, stearyl mercaptan 0.77, polyethylene glycol monooleyl ether 10.3, an acetylenic surfactant 5.1, Nikkol BT 12 (a

*applicants*



surfactant) 5.1, tripropylene glycol 130 and water 350, emulsified, mixed with azobis(dimethyleneisobutyramidine) HCl salt 0.5 and vinyl chloride 38.5 g and heated while stirring at 60° for 15 h to give an emulsion containing 38.5% polymer particles with average diameter 0.09 µm. A 2%-solids dilution of the emulsion in water was prepared and used as dry **soil repellent** for nylon knitted fabric.

- ST fabric soilproofing fluoro chem **oil water repellent**; succinic acid perfluoroalkylethyl ester **oil water repellent**; fluoropolymer acrylic soilproofing coating perfluoroalkylethyl ester additive
- IT Coating materials  
(**antisoiling**; fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface)
- IT Fluoropolymers, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(coatings; fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface)
- IT **Oilproofing** agents  
**Waterproofing** agents  
(fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface)
- IT Textiles  
(treatment of; fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface)
- IT 64-17-5DP, Ethanol, perfluoroalkyl-substituted, esters with succinic dichloride, uses 108-30-5DP, Succinic anhydride, diester with ethanolmethylperfluoroalkylsulfamide 109-83-1DP, N-Methylethanolamine, perfluoroalkylsulfamide, diesters with succinic anhydride 110-73-6DP, N-Ethylethanolamine, perfluoroalkylsulfamide, diesters with succinic anhydride 543-20-4DP, Succinic dichloride, diester with perfluoroalkyl-substituted ethanol **357921-70-1P**  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface)
- IT 75-01-4DP, Vinyl chloride, polymer with perfluoroalkylethyl acrylate and other vinyl monomers 79-10-7DP, Acrylic acid, perfluoroalkylethyl ester, polymers with vinyl monomers 924-42-5DP, N-Methylolacrylamide, polymer with perfluoroalkylethyl acrylate and other vinyl monomers 4813-57-4DP, Stearyl acrylate, polymer with perfluoroalkylethyl acrylate and other vinyl monomers  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine compds. and **water-** and **oil-repellent** compns. containing them for **prevention of soiling** of a surface).
- IT **261928-47-6P**  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(**oil and water repellent**; fluorine

comps. and **water-** and **oil-repellent**  
comps. containing them for **prevention of soiling** of a  
surface)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) E I Du Pont de Nemours And Company; JP 2000506552 A
- (2) E I Du Pont de Nemours And Company; TW 375647 A
- (3) E I Du Pont de Nemours And Company; US 5637657 A HCAPLUS
- (4) E I Du Pont de Nemours And Company; US 5859126 A HCAPLUS
- (5) E I Du Pont de Nemours And Company; DE 69602763 E
- (6) E I Du Pont de Nemours And Company; EP 851903 A1 HCAPLUS
- (7) E I Du Pont de Nemours And Company; AU 9669755 A HCAPLUS
- (8) E I Du Pont de Nemours And Company; MX 9801888 A1
- (9) E I Du Pont de Nemours And Company; KR 99045730 A
- (10) E I Du Pont de Nemours And Company; WO 9711135 A1 1997 HCAPLUS
- (11) Minnesota Mining And Manufacturing Company; EP 1000184 A1 HCAPLUS
- (12) Minnesota Mining And Manufacturing Company; US 6127485 A HCAPLUS
- (13) Minnesota Mining And Manufacturing Company; AU 9853727 A HCAPLUS
- (14) Minnesota Mining And Manufacturing Company; WO 9905345 A1 1999 HCAPLUS
- (15) Wako Pure Chemical Industries Ltd; JP 09323956 A 1997 HCAPLUS
- (16) William; US 3509061 A 1970 HCAPLUS

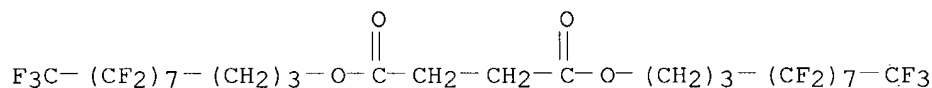
IT 357921-70-1P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)

(fluorine comps. and **water-** and **oil-**  
**repellent** comps. containing them for **prevention of**  
**soiling** of a surface)

RN 357921-70-1 HCAPLUS

CN Butanedioic acid, bis(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-  
heptadecafluoroundecyl) ester (9CI) (CA INDEX NAME)



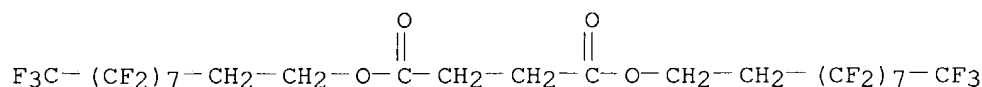
IT 261928-47-6P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)

(**oil** and **water repellent**; fluorine  
comps. and **water-** and **oil-repellent**  
comps. containing them for **prevention of soiling** of a  
surface)

RN 261928-47-6 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-  
heptadecafluorodecyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:658378 HCAPLUS

DN 133:239340

ED Entered STN: 20 Sep 2000  
 TI High solids, shelf-stable spin finish **composition** comprising a hydrocarbon surfactant for treating synthetic **fibers**  
 IN Hauser, Edward R.  
 PA 3M Innovative Properties Company, USA  
 SO U.S., 16 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM D06M013-148  
 NCL 252008810  
 CC 40-9 (Textiles and Fibers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6120695	A	20000919	US 1999-228468	19990111
PRAI	US 1999-228468		19990111		
AB	The spin finish <b>composition</b> has a HLB value .apprx.2-13 and comprises a hydrocarbon surfactant and a total weight percent of H2O t, where t < k, and where k is the weight percent of H2O required to render the <b>compn</b> . visibly turbid. Thus, molten Emerest 2712 was applied to polypropylene <b>fibers</b> from which a tufted carpet was made.				
ST	oil water resistance carpet spin finish; polypropylene <b>fiber</b> spin finish; polyoxyalkylene spin finish <b>fiber</b>				
IT	Fabric finishing (agents; low melting high-solids spin finish <b>composition</b> containing a polyoxyalkylene surfactant for synthetic <b>fibers</b> in manufacture of soil/oil- and water-resistant carpet)				
IT	Carpets Lubricants <b>Oilproofing</b> <b>Waterproofing</b> (low melting high-solids spin finish <b>composition</b> containing a polyoxyalkylene surfactant for synthetic <b>fibers</b> in manufacture of soil/oil- and water-resistant carpet)				
IT	Polyamide <b>fibers</b> , uses Polypropene <b>fibers</b> , uses RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) (low melting high-solids spin finish <b>composition</b> containing a polyoxyalkylene surfactant for synthetic <b>fibers</b> in manufacture of soil/oil- and water-resistant carpet)				
IT	Surfactants (nonionic; in low melting high-solids spin finish <b>composition</b> containing a polyoxyalkylene surfactant for synthetic <b>fibers</b> in manufacture of soil/oil- and water-resistant carpet)				
IT	25085-53-4, Isotactic polypropylene RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) ( <b>fibers</b> ; in low melting high-solids spin finish <b>compn</b> . containing a polyoxyalkylene surfactant for synthetic <b>fibers</b> in manufacture of soil/oil- and water-resistant carpet)				
IT	93-82-3, Stearyl diethanolamide 9005-08-7, Emerest 2712 11132-83-5D, Desmodur N-75, urethane adduct with methylperfluorooctanesulfonamidoethanol 24448-09-7D, N-Methylperfluorooctanesulfonamidoethanol, urethane adduct with isocyanate 31566-31-1, Glyceryl monostearate 87988-57-6 270920-44-0 <b>272439-83-5 272439-85-7</b> <b>272439-87-9</b> 272444-29-8, FC-5101				

RL: TEM (Technical or engineered material use); USES (Uses)  
(in low melting high-solids spin finish **composition** containing a  
polyoxyalkylene surfactant for synthetic **fibers** in manufacture of  
soil/oil- and water-resistant carpet)

RE.CNT 72 THERE ARE 72 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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IT 272439-83-5 272439-85-7 272439-87-9

RL: TEM (Technical or engineered material use); USES (Uses)  
 (in low melting high-solids spin finish **composition** containing a  
 polyoxyalkylene surfactant for synthetic **fibers** in manufacture of  
 soil/oil- and water-resistant carpet)

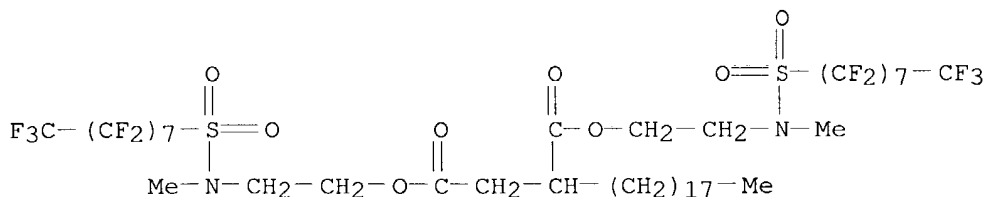
RN 272439-83-5 HCAPLUS

CN Butanedioic acid, octadecenyl-, bis[2-[(heptadecafluorooctyl)sulfonyl]meth  
 hylamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

CRN 272439-82-4

CMF C44 H54 F34 N2 O8 S2



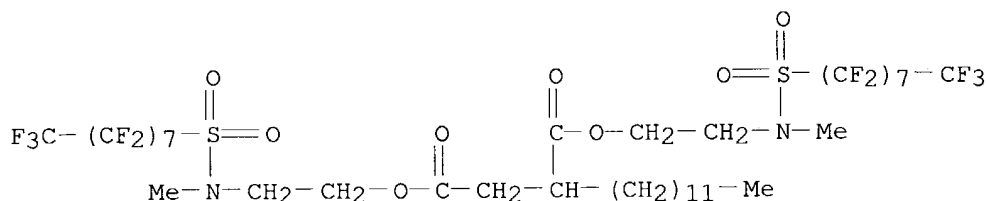
RN 272439-85-7 HCAPLUS

CN Butanedioic acid, dodecenyl-, bis[2-[(heptadecafluorooctyl)sulfonyl]methy  
 lamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

CRN 272439-84-6

CMF C38 H42 F34 N2 O8 S2



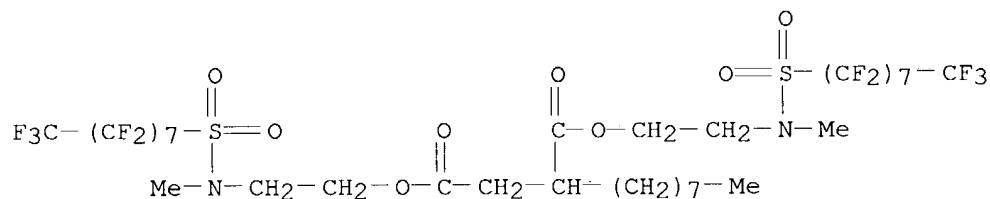
RN 272439-87-9 HCAPLUS

CN Butanedioic acid, octenyl-, bis[2-[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

CRN 272439-86-8

CMF C34 H34 F34 N2 O8 S2



L26 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:636157 HCAPLUS

DN 133:239335

ED Entered STN: 13 Sep 2000

TI High-solids spin finish **composition** comprising a hydrocarbon surfactant and a fluorochemical emulsion for treating synthetic **fibers**

IN Dunsmore, Irvin F.; Lockridge, James R.; Hauser, Edward R.; Jariwala, Chetan P.

PA 3M Innovative Properties Company, USA

SO U.S., 16 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM D06M015-00

NCL 252008810

CC 40-9 (Textiles and Fibers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6117353	A	20000912	US 1999-228469	19990111
	US 6536804	B1	20030325	US 2000-635081	20000808
PRAI	US 1999-228469	A3	19990111		

AB A high-solids spin finish **composition** of a hydrocarbon surfactant and a fluorochem. emulsion can be readily applied to synthetic **fibers** during the **fiber**-making process. Thus, Emerest 2712 and an adduct of Desmodur N-75 and N-Methylperfluorooctanesulfonamidoethanol forming a clear solution was applied to polypropylene **fibers** from

which a tufted carpet was made. The spin finish imparted good coefficient of friction to the **fiber** as well as good **water** and **oil repellency** to the tufted carpet.

ST oil water resistance carpet spin finish; polypropylene **fiber**  
spin finish; polyoxyalkylene fluorochem spin finish **fiber**

IT Fabric finishing  
(agents; low melting high-solids spin finish **composition** containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

IT Carpets

Lubricants

**Oilproofing**

**Waterproofing**

(low melting high-solids spin finish **composition** containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

IT Polyamide **fibers**, uses

Polypropene **fibers**, uses

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(low melting high-solids spin finish **composition** containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

IT Surfactants

(nonionic; in low melting high-solids spin finish **composition** containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

IT 25085-53-4, Isotactic polypropylene

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(**fibers**; in low melting high-solids spin finish **compn** . containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

IT 93-82-3, Stearyl diethanolamide 9005-08-7, Emerest 2712 11132-83-5D, Desmodur N-75, urethane adduct with methylperfluorooctanesulfonamidoethanol 24448-09-7D, N-Methylperfluorooctanesulfonamidoethanol, urethane adduct with isocyanate 31566-31-1, Glyceryl monostearate 87988-57-6 270920-44-0 **272439-83-5 272439-85-7**

**272439-87-9** 272444-29-8, FC-5101

RL: TEM (Technical or engineered material use); USES (Uses)

(in low melting high-solids spin finish **composition** containing a polyoxyalkylene surfactant and a fluorochem. emulsion for synthetic **fibers** in manufacture of soil/oil- and water-resistant carpet)

RE.CNT 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD

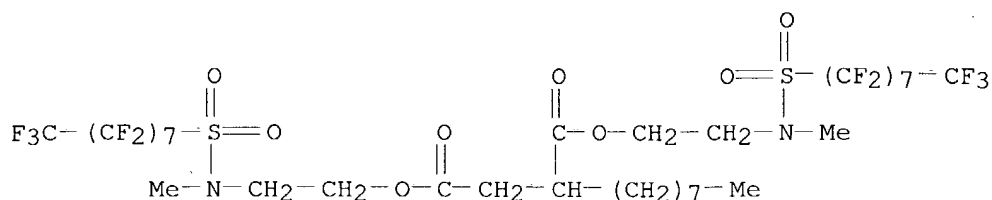
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- (65) Vinod; US 4925707 1990 HCAPLUS







L26 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:520265 HCAPLUS

DN 133:224256

ED Entered STN: 01 Aug 2000

TI Nano-structured materials with low surface energies formed by polyelectrolytes and fluorinated amphiphiles (PEFA)

AU Thunemann, Andreas F.

CS Max Planck Institute of Colloids and Interfaces, Golm, D-14476, Germany

SO Polymer International (2000), 49(7), 636-644

CODEN: PLYIEI; ISSN: 0959-8103

PB John Wiley & Sons Ltd.

DT Journal; General Review

LA English

CC 42-0 (Coatings, Inks, and Related Products)

AB A review, with 41 refs., on the mesomorphous structure (from columnar discotic to perforated lamellar), low surface energy, and applications of polyelectrolytes and fluorinated amphiphiles (PEFA) complexes. The polyelectrolytes are, e.g., polymers of diallyldimethylammonium chloride and N-methyl-N-vinylacetamide, and polyethyleneimine and the fluorinated amphiphiles include perfluorinated carboxylates, fluorinated sulfonates, sodium -[bis(perfluorohexylethyl)-2-sulfosuccinate] (Fluowet SB), and fluorinated phosphates (Zonyl FSE). The PEFA's are materials which can be prepared as nano-structured coatings on different substrates. The surface energy of PEFA coatings is remarkably low and can be adjusted to 6-18 mJ/m<sup>2</sup>. Many of the phys. properties, such as elastic modulus and mech. strength, are determined by the nature of the polymer structure. By adjusting charge d., mol. weight, and the content of nonionic comonomers, the coatings can be optimized for specific applications. The amphiphiles have a decisive influence on the nano-structure and on the surface energy of these materials, acting as building blocks, which vary in their number of fluorinated chains, chain length, and in ionic head-groups. Carboxylate, phosphate and sulfonate groups are preferred for the preparation of PEFA's. Applications are found predominantly in low-friction and anti-soiling coatings.

ST review polyelectrolyte fluorinated amphiphile complex structure coating; surface energy polyelectrolyte fluorinated amphiphile complex review; elasticity mech strength polyelectrolyte fluorinated amphiphile review; coating **antisoiling** polyelectrolyte fluorinated amphiphile review

IT Coating materials

(antifriction; surface energy and elasticity of complexes of polyelectrolytes and fluorinated amphiphiles for antifriction and **antisoiling** coatings)

IT Coating materials

(**antisoiling**; surface energy and elasticity of complexes of polyelectrolytes and fluorinated amphiphiles for antifriction and **antisoiling** coatings)

IT Amphiphiles

Bending strength

Elasticity

Polyelectrolytes

Polymer chains

Polymer morphology

Surface energy

(surface energy and elasticity of complexes of polyelectrolytes and fluorinated amphiphiles for antifriction and **antisoiling** coatings)

IT 3195-78-6D, N-Methyl-N-vinylacetamide, polymers 7398-69-8D,  
Diallyldimethylammonium chloride, polymers 9002-98-6 **54950-05-9**  
, Fluowet SB 83653-37-6, Zonyl FSE

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(surface energy and elasticity of complexes of polyelectrolytes and fluorinated amphiphiles for antifriction and **antisoiling** coatings)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

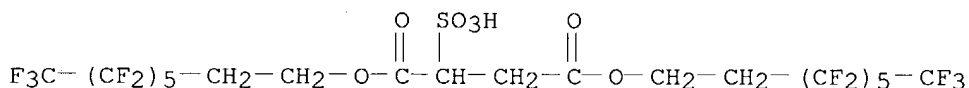
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  - (37) Yasuda, H; Langmuir 1995, V11, P3255 HCAPLUS
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- IT **54950-05-9**, Fluowet SB

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(surface energy and elasticity of complexes of polyelectrolytes and fluorinated amphiphiles for antifriction and **antisoiling** coatings)

RN 54950-05-9 HCAPLUS

CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) ester, sodium salt (9CI) (CA INDEX NAME)



● Na

L26 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:362566 HCAPLUS

DN 133:18738

ED Entered STN: 31 May 2000

TI Making a **fiber** containing a fluorochemical polymer melt additive and having a low melting, high-solids spin finish

IN Lockridge, James E.; Dunsmore, Irvin F.

PA 3M Innovative Properties Company, USA

SO U.S., 15 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM D01F001-10

ICS D06M013-148

NCL 264130000

CC 40-9 (Textiles and Fibers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6068805	A	20000530	US 1999-228459	19990111
PRAI	US 1999-228459		19990111		

AB A **fiber** containing a fluorochem. polymer melt additive is treated with a low melting, high-solids spin finish **composition** during the **fiber**-making process. Also, a **fiber** is treated with a combination of fluorochem. and low melting, high-solids spin finish **composition** during the **fiber**-making process. Polypropylene **fiber** was made using 1.0% Scotchban FC-1808 protector and the **fiber** was finished using PEG400DS surfactant, and woven into carpet samples having coefficient of friction 0.21, **water repellency** 8, and **oil repellency** 3; vs. 0.20, 1, and F, resp., without fluorochem.

ST polypropylene **fiber** fluorochem spin finish; polyethylene glycol distearate spin finish; fluorocarbon additive melt **fiber** manuf

IT Fabric finishing

(agents, low melting, high-solids; containing a fluorochem. polymer additive and hydrocarbon surfactant for repellent carpets)

IT Carpets

(containing a fluorochem. polymer additive and hydrocarbon surfactant for

- repellent carpets)
- IT Polypropene **fibers**, properties  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
 PROC (Process)  
 (finish containing a fluorochem. polymer additive and hydrocarbon  
 surfactant for repellent carpets)
- IT Hydrocarbons, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fluoro, fluorochem. additive; containing a fluorochem. polymer additive  
 and hydrocarbon surfactant for repellent carpets)
- IT Surfactants  
 (nonionic; finish containing a fluorochem. polymer additive and hydrocarbon  
 surfactant for repellent carpets)
- IT **Oilproofing**  
**Waterproofing**  
 (spin finish; containing a fluorochem. polymer additive and hydrocarbon  
 surfactant for repellent carpets)
- IT 9005-08-7, Polyethylene glycol distearate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Emerest 2712, surfactant; finish containing a fluorochem. polymer additive  
 and hydrocarbon surfactant for repellent carpets)
- IT 25085-53-4, Isotactic polypropene  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
 PROC (Process)  
 (**fiber**; finish containing a fluorochem. polymer additive and  
 hydrocarbon surfactant for repellent carpets)
- IT 93-82-3 24448-09-7D, urethane adducts with blocked HMDI prepolymers  
 31566-31-1, Glyceryl monostearate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (finish containing a fluorochem. polymer additive and hydrocarbon  
 surfactant for repellent carpets)
- IT 11132-83-5D, Desmodur n 75, reaction products with  
 fluorooctylsulfonylethylmethylaminoethanol 24448-09-7 87988-57-6  
 270920-44-0 272128-22-0 **272439-83-5 272439-85-7**  
**272439-87-9** 272444-29-8, Scotchgard FC 5101 272444-30-1,  
 Scotchgard FC 5102 272444-31-2, Scotchban FC 1801 272444-32-3,  
 Scotchban FC 1808  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fluorochem. additive; finish containing a fluorochem. polymer additive and  
 hydrocarbon surfactant for repellent carpets)

RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD

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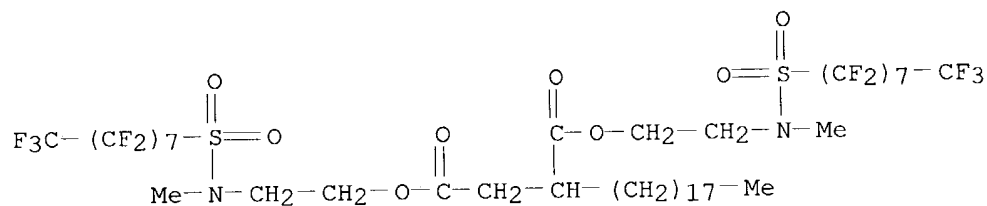
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Fiber Quality, <http://www.onlinetextilesnews.com/news/90345854915850.htm>  
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  - (26) Hirano; US 3770861 1973
  - (27) Howells; US 4566981 1986 HCAPLUS
  - (28) Hummuller; US 4153561 1979 HCAPLUS
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- IT 272439-83-5 272439-85-7 272439-87-9  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fluorochem. additive; finish containing a fluorochem. polymer additive and

hydrocarbon surfactant for repellent carpets)

RN 272439-83-5 HCAPLUS  
CN Butanedioic acid, octadecenyl-, bis[2-[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

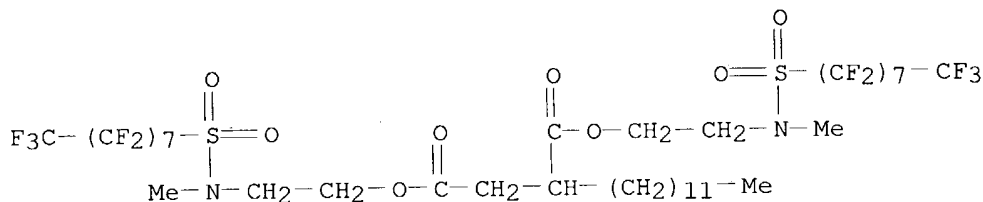
CRN 272439-82-4  
CMF C44 H54 F34 N2 O8 S2



RN 272439-85-7 HCAPLUS  
CN Butanedioic acid, dodecenyl-, bis[2-[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

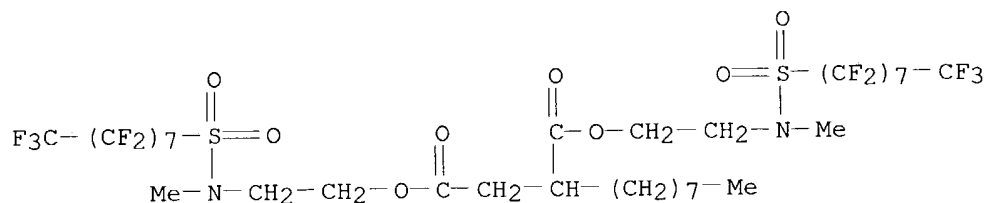
CRN 272439-84-6  
CMF C38 H42 F34 N2 O8 S2



RN 272439-87-9 HCAPLUS  
CN Butanedioic acid, octenyl-, bis[2-[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl] ester (9CI) (CA INDEX NAME)

CM 1

CRN 272439-86-8  
CMF C34 H34 F34 N2 O8 S2



L26 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:335733 HCAPLUS

DN 132:349044

ED Entered STN: 19 May 2000

TI Aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy

IN Thuenemann, Andreas; Paulke, Bernd-Reiner; Lochhaas, Kai Helmut; Lieske, Antje

PA Colloid Surface Technologies G.m.b.H., Germany

SO Ger. Offen., 14 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C09D201-02

ICS C09D133-14; C09D133-24; C09D139-00; C09D179-02; C09D105-08;

D06M015-19; D06M015-267; D06M015-285; D06M015-61; D06M015-356

CC 42-7 (Coatings, Inks, and Related Products)

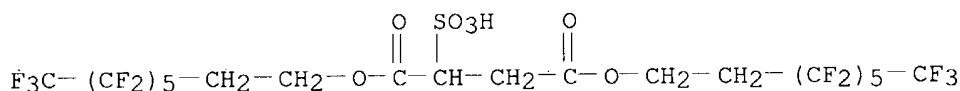
Section cross-reference(s): 46

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19852584	A1	20000518	DE 1998-19852584	19981114
	WO 2000029489	A1	20000525	WO 1999-EP8720	19991112
	W: US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	WO 2000029490	A2	20000525	WO 1999-EP8721	19991112
	WO 2000029490	A3	20011108		
	W: US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1124906	A1	20010822	EP 1999-958027	19991112
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	EP 1144516	A2	20011017	EP 1999-963295	19991112
	EP 1144516	A3	20020911		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	DE 1998-19852584	A	19981114		
	DE 1999-19901973	A	19990120		
	WO 1999-EP8720	W	19991112		
	WO 1999-EP8721	W	19991112		
AB	The title dispersions, giving coated substrates with low surface energy, contain polyelectrolytes and ionic, F-containing surfactants in 1:1-1.5 ratio. Fluowet SB [30% dispersion of Na bis[(perfluoroalkyl)ethyl] 2-sulfosuccinate] was diluted (7.5 g) with H2O to 500 mL, ultrasonicated for 10 min, and mixed over 20 min with 64.38 mg polyethylenimine (mol. weight 750,000) in 87 mL H2O with strong stirring to give a dispersion (average particle size 300 nm) ready for use in coating.				
ST	coating at low surface energy; surfactant ionic fluorinated coating; polyelectrolyte complex dispersion coating; polyethylenimine complex dispersion coating; sulfosuccinate fluoroalkyl surfactant coating; <b>waterproofing</b> coating surfactant polyelectrolyte				
IT	Polyelectrolytes (complexes with fluorinated, ionic surfactants; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)				



- IT Surfactants  
(fluorinated ionic, complexes with polyelectrolytes; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT Coating materials  
(water-resistant; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT Coating materials  
(water-thinned; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT 2991-51-7 9002-98-6D, Aziridine homopolymer, reaction products with oxiranes  
RL: TEM (Technical or engineered material use); USES (Uses)  
(aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT 75-21-8D, Oxirane, reaction products with polyethylenimine, uses 106-88-7D, Ethyloxirane, reaction products with polyethylenimine 9002-98-6 53633-54-8, Luviquat PQ 11 269065-75-0 269067-56-3, Lupasol LU 209 269069-61-6, Lupasol LU 236  
RL: TEM (Technical or engineered material use); USES (Uses)  
(complexes with fluorinated, ionic surfactants; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT 54950-05-9, Fluowet SB 57534-43-7, Zonyl FSA 67479-86-1, Zonyl FSP 141615-38-5, Fluowet PL 80 149316-04-1, Hoe S 2746  
RL: TEM (Technical or engineered material use); USES (Uses)  
(complexes with polyelectrolytes; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- IT 54950-05-9, Fluowet SB  
RL: TEM (Technical or engineered material use); USES (Uses)  
(complexes with polyelectrolytes; aqueous colloidal dispersions containing complexes of polyelectrolytes and ionic, fluorinated surfactants for use in coatings with low surface energy)
- RN 54950-05-9 HCAPLUS
- CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) ester, sodium salt (9CI) (CA INDEX NAME)



● Na

L26 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2000:238068 HCAPLUS  
DN 132:266766  
ED Entered STN: 13 Apr 2000  
TI Straight-chain and branched perfluoroalkyl halides and derivatives, their preparation, fluoropolymers, and use as oil- and water

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

-**repellant** treatment agents for surfaces

IN Behr, Frederick E.; Dams, Rudolf J.; Dewitte, Johan E.; Hagen, Donald F.  
 PA 3M Innovative Properties Company, USA  
 SO U.S., 22 pp., Cont.-in-part of U.S. Ser. No. 723,049, abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C08F018-20  
 NCL 526245000  
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 40, 46

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 6048952	A	20000411	US 1997-794798	19970204
	JP 2002138078	A2	20020514	JP 2001-204928	19920710
	US 6365769	B1	20020402	US 2000-504483	20000215
PRAI	US 1991-728184	B1	19910710		
	US 1994-314939	B3	19940929		
	US 1995-476954	B1	19950607		
	US 1996-723049	B2	19960930		
	JP 1992-183345	A3	19920710		
	US 1997-794798	A3	19970204		

AB Aqueous treating agents for a substrate comprise compds. with pendant saturated perfluoroalkyl groups, where some of the perfluoroalkyl groups are straight chain and some are branched chain; and applying the polymer to the substrate; where 60-90% of the perfluoroalkyl groups are straight chain and .apprx.10-40% of the perfluoroalkyl groups are branched chain.

ST perfluoroalkyl halide surface treatment agent; straight branched perfluoroalkyl halide mixt; fluoropolymer perfluoroalkyl prepn use; oil **waterproofing** agent fabric

IT Surfactants

(anionic-nonionic; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Textiles

(cotton-polyester, substrate; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Polyurethanes, uses

Polyurethanes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(fluorine-containing, perfluoroalkyl group-containing; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Polyamides, uses

Polycarbodiimides

Polyethers, uses

Polyolefins

Polyurethanes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(perfluoroalkyl group-containing; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Fluoropolymers, uses

Fluoropolymers, uses

Fluoropolymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(polyurethane-, perfluoroalkyl group-containing; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT **Oilproofing** agents

Polymerization

Textiles

Water-resistant materials

(straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Carpets

Ceramics

Paper

(substrate; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT Glass, miscellaneous

Metals, miscellaneous

Plastics, miscellaneous

RL: MSC (Miscellaneous)

(substrate; straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT 27854-31-5P 27905-45-9P 30389-25-4P 38436-14-5P 38436-18-9P

38565-53-6P 52591-27-2P 81190-28-5P 150940-84-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT 423-60-9P, Perfluorooctanesulfonyl chloride 423-62-1P,

Perfluorodecyl iodide 678-39-7P 865-86-1P 1693-71-6P, Triallyl borate

2043-47-2P 2043-54-1P 34143-74-3P 34451-25-7DP, reaction products

with propargyl alc., phosphate esters, ammonium salts 34451-28-0P

80233-96-1P 133299-39-5P 150940-83-3P 218462-37-4P 218462-40-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT 107-19-7DP, Propargyl alcohol, reaction products with

perfluoroalkylethanethiols, phosphate esters, ammonium salts 107-19-7DP,

Propargyl alcohol, reaction products with perfluoroalkylthiols and PAPI

9003-11-6DP, mono[ $\omega$ -[(heptadecafluorodecyl)thio]alkyl] ethers

9016-87-9DP, PAPI, reaction products with perfluoroalkyl alcs.

27905-45-9DP, reaction products with PAPI 34143-74-3DP, reaction

products with methoxymethylmelamines, propargyl alc. and PAPI

34451-25-7DP, reaction products with propargyl alc., phosphate esters,

ammonium salts **54949-95-0P** 58228-15-2P 62097-34-1DP,

Ethylene glycol-PAPI copolymer, reaction products with

perfluoroalkylethanols 62880-96-0P 62880-97-1P 63225-57-0P

99332-32-8P 118570-75-5P 149759-83-1P 150940-87-7P 150944-46-0P

150944-47-1P 150953-92-7P 150956-37-9P **189398-01-4DP**,

phosphate esters, ammonium salts 218462-55-6P 218462-56-7P

218462-57-8P 218462-58-9DP, reaction products with propane sultone

218462-59-OP 218462-60-3P 218462-61-4P 218462-62-5P 218462-64-7P  
 218462-65-8DP, reaction products with propane sultone 218462-66-9P  
 218462-67-OP 218462-68-1P 218462-69-2P 218605-22-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

IT 62-56-6, Thiourea, reactions 74-85-1, Ethene, reactions 107-15-3, Ethylene diamine, reactions 107-18-6, 2-Propen-1-ol, reactions 109-55-7 307-51-7, Perfluorodecanesulfonyl fluoride 814-68-6, Acryloyl chloride 3089-11-0D, Hexamethoxymethyl melamine, reaction products with perfluoroalkylethylthiols 6915-15-7, Malic acid 7553-56-2, Iodine, reactions 10043-35-3, Boric acid, reactions 15214-89-8 32779-61-6 40630-30-6 55591-23-6, Perfluorohexanesulfonyl chloride

RL: RCT (Reactant); RACT (Reactant or reagent)

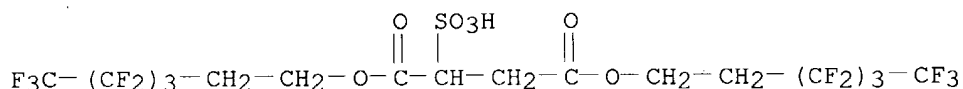
(straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

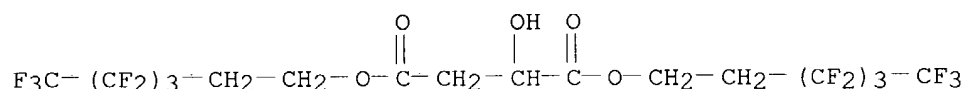
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- (4) Anon; EP 0142041 A1 1985 HCAPLUS
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- (22) Brown; US 2950317 1960 HCAPLUS
- (23) Bultman; US 4484990 1984 HCAPLUS
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- (25) Chang; US 3540126 1970 HCAPLUS
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- (27) Chang; US 4668406 1987 HCAPLUS
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- (29) Dear; US 4158672 1979 HCAPLUS
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- (32) Falk; US 5132445 1992 HCAPLUS
- (33) Feiring; US 5260492 1993 HCAPLUS
- (34) Feiring; US 5326917 1994 HCAPLUS
- (35) Francen; US 3562156 1971
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- (37) Guenther; US 3398182 1968 HCAPLUS  
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 (39) Heine; US 3094547 1963  
 (40) Husted; US 2666797 1954 HCAPLUS  
 (41) Husted; US 2691043 1954 HCAPLUS  
 (42) Katsushima; US 3499940 1970  
 (43) Katsushima; US 3525758 1970  
 (44) Katsushima; US 3919361 1975 HCAPLUS  
 (45) Krahler; US 4489006 1984 HCAPLUS  
 (46) Landucci; US 4024178 1977 HCAPLUS  
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 (48) Park, J; Free-Radical Catalyzed Addition of Unsaturated Alcohols to Perhaloalkanes 1961, P2089 HCAPLUS  
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 (50) Schwenk; US 4219681 1980 HCAPLUS  
 (51) Simons; US 2519983 1950 HCAPLUS  
 (52) Stern; US 4606737 1986 HCAPLUS  
 (53) Tiers; US 2972638 1961 HCAPLUS  
 IT **54949-95-0P 189398-01-4DP**, phosphate esters, ammonium salts  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (straight-chain and branched perfluoroalkyl halides and derivs. for use as **oil-** and **water-repellent** treatment agents for fabrics and other surfaces)  
 RN 54949-95-0 HCAPLUS  
 CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl) ester, sodium salt (9CI) (CA INDEX NAME)



● Na

- RN 189398-01-4 HCAPLUS  
 CN Butanedioic acid, hydroxy-, bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl) ester (9CI) (CA INDEX NAME)



- L26 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:198216 HCAPLUS  
 DN 132:238463  
 ED Entered STN: 28 Mar 2000  
 TI **Water-** and **oil-repellent** fluoropolymer **compositions** for textiles  
 IN Oharu, Kazuya  
 PA Asahi Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09K003-18  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000087014	A2	20000328	JP 1998-258729	19980911
PRAI	JP 1998-258729		19980911		
OS	MARPAT 132:238463				
AB	Title compns., with good dry-soil resistance, contain fluoropolymers and esters of R(CH <sub>2</sub> ) <sub>2</sub> OH (R = perfluoroalkyl) and saturated carboxylic acids. A nylon cloth was soaked in an aqueous emulsion containing C <sub>8</sub> F <sub>17</sub> (CH <sub>2</sub> ) <sub>2</sub> OCOCH <sub>2</sub> CH <sub>2</sub> O(CH <sub>2</sub> ) <sub>2</sub> C <sub>8</sub> F <sub>17</sub> [prepared from C <sub>8</sub> F <sub>17</sub> (CH <sub>2</sub> ) <sub>2</sub> OCOCH:CH <sub>2</sub> and C <sub>8</sub> F <sub>17</sub> (CH <sub>2</sub> ) <sub>2</sub> OH in the presence of p-toluenesulfonic acid] and a polymer prepared from perfluoroalkylethyl acrylate, N-methylolacrylamide, stearyl acrylate, and vinyl chloride, roller-pressed, dried, and heated to form a cloth showing good <b>oil</b> and <b>water repellency</b> and dry- <b>soil</b> resistance.				
ST	<b>oil water repellency</b> fluoropolymer coating perfluoroalkylethyl carboxylate ester; dry soil resistance fabric fluoropolymer coating perfluoroalkylethyl carboxylate ester				
IT	Fluoropolymers, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic; perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	Esters, uses RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (fluoro; perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	Coating materials (oil- and water-resistant; perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	Textiles (perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	Polyamide <b>fibers</b> , miscellaneous RL: MSC (Miscellaneous) (perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	678-39-7, 2-(Perfluorooctyl)ethyl alcohol 1996-88-9, 2-(Perfluorooctyl)ethyl methacrylate 7647-01-0, Hydrogen chloride, reactions 27905-45-9, 2-(Perfluorooctyl)ethyl acrylate RL: RCT (Reactant); RACT (Reactant or reagent) (addition of; perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	88-95-9, Phthaloyl dichloride 112-76-5, Stearoyl chloride 543-20-4, Succinoyl dichloride RL: RCT (Reactant); RACT (Reactant or reagent) (condensation of; perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)				
IT	99955-83-6P 261928-45-4P 261928-46-5P <b>261928-47-6P</b> 261928-48-7P				

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)

IT 75-01-4DP, Vinyl chloride, polymers with perfluoroalkylethyl acrylates and acrylic compds. 79-10-7DP, Acrylic acid, perfluoroalkyl Et esters, polymers with acrylic and vinyl compds. 924-42-5DP, N-Methylolacrylamide, polymers with perfluoroalkylethyl acrylates and vinyl compds. 4813-57-4DP, Stearyl acrylate, polymers with perfluoroalkylethyl acrylates and vinyl compds.

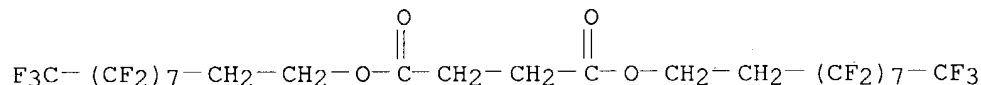
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)

IT **261928-47-6P**

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(perfluoroalkylethyl carboxylate ester-containing fluororesin coatings for textiles)

RN 261928-47-6 HCAPLUS

CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:162603 HCAPLUS

DN 133:121009

ED Entered STN: 12 Mar 2000

TI Polyelectrolyte-surfactant complexes with fluorinated surfactants: a new type of material for coatings

AU Lochhaas, K. H.; Thunemann, A. F.; Antonietti, M.

CS Max-Planck Institute of Colloids and Interfaces, Golm, D-14476, Germany

SO Surface Coatings International (1999), 82(9), 451-455

CODEN: SCOIE6; ISSN: 1356-0751

PB Oil and Colour Chemists' Association

DT Journal

LA English

CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 42, 46

AB Four polyelectrolyte-surfactant complexes with com. surfactants: Fluowet SB, Zonyl FSA, FSE, and FSP and poly(diallyldimethylammonium chloride) were prepared and evaluated as dispersants in coating formulations. The complexes have a lamellar structure and mostly planar interfaces, except the Zonyl FSE complex, for which has an addnl. regular structure element assumed to be hexagonally arranged perforations in the lamellae. The complexes provide repellency of polar and non-polar substances, low surface energy, good thermal and mech. stability, and ease of processing into thin films. Coatings formulated with the complexes can provide protection of building structures and machinery from fouling or environmental contamination and can be used for self-lubrication of machine parts. A perforated lamellar structure, such as that of the Zonyl FSE complex can be used to enrich O2 from air for biomedical purposes.

- ST polyelectrolyte surfactant complex lamellar structure hydrophobicity;  
antifouling coating polyelectrolyte surfactant complex; **soil repellency** diallyldimethylammonium chloride polyelectrolyte surfactant complex
- IT Surfactants  
(anionic; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Coating materials  
(antifouling; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Polyoxyalkylenes, properties  
Polyoxyalkylenes, properties  
RL: PRP (Properties)  
(fluorine-containing; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Polyoxyalkylenes, properties  
RL: PRP (Properties)  
(perfluoro; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Polymer morphology  
(phase; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Fluoropolymers, properties  
Fluoropolymers, properties  
Fluoropolymers, properties  
RL: PRP (Properties)  
(polyoxyalkylene-; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Contact angle  
Polyelectrolytes  
(structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT Fluoropolymers, properties  
RL: PRP (Properties)  
(structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT 67479-86-1D, Zonyl FSP, complexes with poly(diallyldimethylammonium chloride)  
RL: PRP (Properties)  
(PEG ammonium phosphate perfluoroalkyl ethers; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT 83653-37-6D, Zonyl FSE, complexes with poly(diallyldimethylammonium chloride)  
RL: PRP (Properties)  
(ammonium salts of PEG ether phosphates; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT 57534-43-7D, Zonyl FSA, complexes with poly(diallyldimethylammonium chloride)  
RL: PRP (Properties)  
(perfluoroalkylethylthiopropionates; structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)
- IT 26062-79-3D, Poly(diallyldimethylammonium chloride), complexes with fluorinated anionic surfactants **54950-05-9D**, Fluowet SB,



complexes with poly(diallyldimethylammonium chloride)

RL: PRP (Properties)

(structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Antonietti, M; Adv Mater 1995, V7(8), P751 HCAPLUS
- (2) Antonietti, M; Adv Mater 1996, V8(1), P41 HCAPLUS
- (3) Antonietti, M; Macromolecules 1994, V27, P6007 HCAPLUS
- (4) Antonietti, M; Macromolecules 1996, V24, P4199
- (5) Bernett, M; J Phys Chem 1962, V66, P1207 HCAPLUS
- (6) Girifalco, L; J Phys Chem 1957, V61, P904 HCAPLUS
- (7) Goddard, E; Colloid Surf 1996, V19, P301
- (8) Hayagawa, J; J Phys Chem 1982, V86, P3866
- (9) Hayagawa, J; J Phys Chem 1983, V87, P506
- (10) Li, D; J Coll Interf Sci 1992, V148(1), P190 HCAPLUS
- (11) Micha, M; Diploma Thesis, Philipps-Universitat Marburg 1995
- (12) Semenov, A; Macromolecules 1995, V28, P7491 HCAPLUS

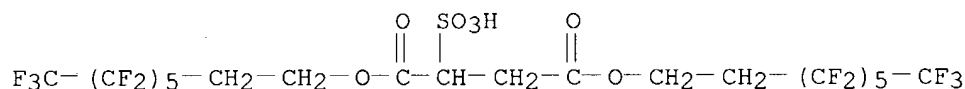
IT 54950-05-9D, Fluowet SB, complexes with poly(diallyldimethylammonium chloride)

RL: PRP (Properties)

(structure and stability of polyelectrolyte-fluorinated surfactant complexes for antifouling and soil resistant coatings)

RN 54950-05-9 HCAPLUS

CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) ester, sodium salt (9CI) (CA INDEX NAME)



● Na

L26 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:96419 HCAPLUS

DN 130:169048

ED Entered STN: 12 Feb 1999

TI High temperature-stable fluorochemicals as hydrophobic and oleophobic additives for synthetic organic polymers

IN Klun, Thomas P.; Gasper, Alton J.; Temperante, John A.

PA Minnesota Mining and Manufacturing Company, USA

SO PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM D01F001-10

ICS C08J005-18; C08K005-10; C08K005-20; D04H001-42; B32B027-18

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9905345	A1	19990204	WO 1997-US22227	19971205

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 6127485	A	20001003	US 1997-901363	19970728
AU 9853727	A1	19990216	AU 1998-53727	19971205
EP 1000184	A1	20000517	EP 1997-950832	19971205
EP 1000184	B1	20030820		

R: DE, FR, GB, IT, NL, SE

JP 2001511477	T2	20010814	JP 2000-504310	19971205
US 6262180	B1	20010717	US 2000-609191	20000630

PRAI US 1997-901363 A 19970728  
 WO 1997-US22227 W 19971205

AB [(Rf)nQOCO]pA, [(Rf)nQCO2]pA', [(Rf)nQNRCO]pA, and [(Rf)nQCONR]A' [Rf = fluoroalkyl, Q = divalent or trivalent linking group where the divalent linking group may be a covalent bond, R = H or (substituted) alkyl, A = mono- or polyfunctional carboxylic acid residue, A' = residue of a mono- or polyfunctional alc. or amine, A or A' contain  $\geq 34$  C atoms with Q = CH<sub>2</sub>CH<sub>2</sub>, n = 1 or 2, p = 1, 2, or many, up to the valency of A or A'] are useful as heat-resistant hydrophobic and oleophobic additives for polymers in the manufacture of films, moldings, and fibers. A typical additive was manufactured by heating Empol 1008 57.8, C<sub>8</sub>F<sub>17</sub>SO<sub>2</sub>NMeCH<sub>2</sub>CH<sub>2</sub>OH 100, p-toluenesulfonic acid 1, and PhMe 50 g 18 h at 150°.

ST heat resistant fluoro ester **oilproofing waterproofing** additive plastic; fluorooctanesulfonamidoethyl fatty ester manuf **oilproofing waterproofing** additive; fiber heat resistant fluoro ester **oilproofing waterproofing** additive; film heat resistant fluoro ester **oilproofing waterproofing** additive; molding heat resistant fluoro ester **oilproofing waterproofing** additive; amide fluoro heat resistant **oilproofing waterproofing** additive plastic

IT Fatty acids, preparation

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (C<sub>18</sub>-unsatd., dimers and trimers, fluorinated alc. esters; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)

IT Alcohols, preparation

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (C<sub>8</sub>-14,  $\gamma$ - $\omega$ -perfluoro, Zonyl BA, esters, with fatty acid dimers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)

IT Alcohols, preparation

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (C<sub>8</sub>-16,  $\gamma$ - $\omega$ -perfluoro, Zonyl BA(N), esters, with fatty acid dimers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)

IT Alcohols, preparation

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (alkoxy, fluorinated; high temperature-stable fluorochems. as hydrophobic

and

- oleophobic additives for synthetic organic polymers)
- IT Carboxylic acids, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (amic, fluorinated; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Alcohols, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (amino, fluorinated; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Polyolefin fibers  
 RL: PRP (Properties)  
 (butene-ethylene; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Fatty acids, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dimer acids, C18, Empol 1061, esters with fluoro alc.; high  
 temperature-stable fluorochems. as hydrophobic and oleophobic additives for  
 synthetic organic polymers)
- IT Fatty acids, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dimer acids, C18, and trimers, fluorinated alc. esters; high  
 temperature-stable fluorochems. as hydrophobic and oleophobic additives for  
 synthetic organic polymers)
- IT Polyolefin fibers  
 RL: PRP (Properties)  
 (ethylene-octene; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Polyolefin fibers  
 RL: PRP (Properties)  
 (ethylene; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic  
 additives for synthetic organic polymers)
- IT Polyamides, uses  
 Polyesters, uses  
 RL: POF (Polymer in formulation); USES (Uses)  
 (fibers; high temperature-stable fluorochems. as hydrophobic and oleophobic  
 additives for synthetic organic polymers)
- IT Amides, preparation  
 Esters, preparation  
 Urethanes  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorinated; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Alcohols, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluoro, C8-14,  $\gamma$ - $\omega$ -perfluoro, Zonyl BA, esters, with fatty  
 acid dimers; high temperature-stable fluorochems. as hydrophobic and  
 oleophobic additives for synthetic organic polymers)
- IT Alcohols, preparation  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluoro, C8-16,  $\gamma$ - $\omega$ -perfluoro, Zonyl BA(N), esters, with

- fatty acid dimers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Heat-resistant materials
- Oilproofing agents
- Plastic films
- Waterproofing agents
- (high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Molded plastics, uses
- RL: POF (Polymer in formulation); USES (Uses)
- (high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Epoxy resins, properties
- Polyurethanes, properties
- RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
- (high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Polyamide fibers, properties
- Polyester fibers, properties
- Polypropene fibers, properties
- Polyurethane fibers
- RL: PRP (Properties)
- (high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Nonwoven fabrics
- (high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers in nonwoven fabrics)
- IT Perfluoro compounds
- RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
- ( $\gamma$ - $\omega$ -, C8-16, alcs., Zonyl BA(N), esters, with fatty acid dimers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT Perfluoro compounds
- RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
- ( $\gamma$ - $\omega$ -perfluoro-C8-14 alcs., Zonyl BA, esters, with fatty acid dimers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT 9002-88-4 24968-12-5 25038-54-4, Poly[imino(1-oxo-1,6-hexanediyl)], uses 25038-59-9, PET polymer, uses 25085-53-4, Isotactic polypropylene 25087-34-7 26062-94-2 26221-73-8 199876-92-1, Morthane PS 400
- RL: POF (Polymer in formulation); USES (Uses)
- (fibers; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)
- IT 110-15-6DP, Butanedioic acid, esters with fluoro alcs., preparation 112-76-5DP, Stearoyl chloride, esters with fluoro alcs. 112-96-9DP, Stearyl isocyanate, oxazolidinones with fluorosulfonamidohydroxychloroethane 124-04-9DP, Adipic acid, esters with fluoro alcs. 143-07-7DP, Dodecanoic acid, esters with fluoro alcs., preparation 822-06-0DP, HDI, oxazolidinones with fluorosulfonamidohydroxychloroethane 2991-50-6DP, esters with dimer fatty diols 2991-51-7DP, esters with dimer fatty diols 13406-91-2DP, amides with dimer acid dichlorides 24448-09-7DP, esters

with fatty acid dimers 52907-69-4DP, Empol 1043, esters with fluoro alcs. 75518-90-0DP, oxazolidinones with stearyl isocyanate 97745-64-7P 127290-22-6DP, Pripol 1009, esters with fluoro alcs. 139948-97-3DP, Pripol 1004, esters with fluoro alcs. 150872-29-0DP, Empol 1008, esters with fluoro alcs. 160676-67-5P 160676-71-1P 160676-72-2P 179799-99-6DP, Empol 1070, esters with fluoro carboxylic acids 204019-28-3DP, Empol 1075, urethanes with fluoro isocyanates 220254-52-4P 220254-54-6P **220254-56-8P** 220254-59-1DP, esters with dimer fatty diols 220254-61-5P 220254-63-7P 220254-65-9P 220254-67-1P 220254-69-3P 220254-71-7DP, urethanes with fluoro alcs. 220254-73-9P 220254-75-1P 220254-77-3P 220254-79-5P 220254-82-0P 220254-84-2DP, amides with dimer acid dichlorides 220254-86-4P 220254-94-4P 220319-04-0P 220319-06-2P 220355-91-9DP, Kemamine DP 3695, reaction products with fluoro epoxides

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(high temperature-stable fluorochems. as hydrophobic and oleophobic additives

for synthetic organic polymers)

IT 141443-45-0, Aspun 6806

RL: POF (Polymer in formulation); USES (Uses)

(high temperature-stable fluorochems. as hydrophobic and oleophobic additives

for synthetic organic polymers)

IT 220355-72-6, Scotch Weld 2158B/A 220355-93-1, EC 5200

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(high temperature-stable fluorochems. as hydrophobic and oleophobic additives

for synthetic organic polymers)

IT 24448-09-7P 220254-59-1P 220254-71-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(precursor; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)

IT 74-89-5, Methylamine, reactions 75-44-5, Carbonic dichloride 106-89-8,

Epichlorohydrin, reactions 107-07-3, Ethylenechlorohydrin, reactions 307-35-7, Fluorad FX-8 1691-99-2, Fluorad FC-10 13406-91-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(precursor; high temperature-stable fluorochems. as hydrophobic and oleophobic additives for synthetic organic polymers)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) E I Du Pont de Nemours And Company; WO 9722659 A 1997 HCAPLUS

(2) Kao Corp; JP 03041160 A 1991 HCAPLUS

(3) Peach State Labs Inc; WO 9501396 A 1995 HCAPLUS

IT **220254-56-8P**

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(high temperature-stable fluorochems. as hydrophobic and oleophobic

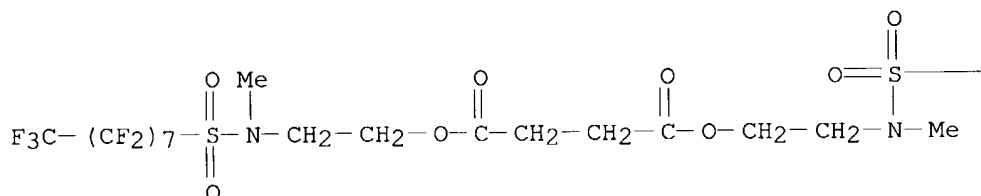
additives

for synthetic organic polymers)

RN 220254-56-8 HCAPLUS

CN Butanedioic acid, bis[2-[[heptadecafluorooctyl)sulfonyl]methylamino]ethyl ] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— (CF<sub>2</sub>)<sub>7</sub>—CF<sub>3</sub>

L26 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:45181 HCAPLUS  
 DN 130:96926  
 ED Entered STN: 22 Jan 1999  
 TI Coatings containing fluorinated esters for improving oil and  
 water repellency  
 IN Anton, Douglas Robert; Kirchner, Jack Robert; Bennett, William Wesley, Jr.  
 PA E. I. Du Pont de Nemours & Co., USA  
 SO U.S., 12 pp., Cont.-in-part of U.S. Ser. No. 5,637,657.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C08L075-04  
 ICS C08L067-07; C08L067-08; C08F283-00  
 NCL 525007000  
 CC 42-5 (Coatings, Inks, and Related Products)  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5859126	A	19990112	US 1996-704487	19960807
	US 5637657	A	19970610	US 1995-529899	19950918
	WO 9711135	A1	19970327	WO 1996-US14629	19960912
	W: AU, CA, JP, KR, MX, NZ				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9669755	A1	19970409	AU 1996-69755	19960912
	AU 714866	B2	20000113		
	EP 851903	A1	19980708	EP 1996-930846	19960912
	EP 851903	B1	19990602		
	R: BE, CH, DE, DK, FR, GB, IT, LI, NL				
	JP 2000506552	T2	20000530	JP 1997-512779	19960912
PRAI	US 1995-529899		19950918		
	US 1996-704487		19960807		
	WO 1996-US14629		19960912		
OS	MARPAT 130:96926				
AB	Coating compns. contain an alkyd, urethane or unsatd. polyester resin binder, and an ester of an unsatd. acid and a fluorinated alc. or thiol for a cured coating having an advancing hexadecane contact angle .gtorsim.40° and durable improved oil and H2O				

**repellency.**

- ST wash resistant **oil repellent** polymer coating;  
perfluoroalkyl alkenoate ester additive coating; polyurethane coating  
fluoro ester additive; alkyd coating fluoro ester additive; unsatd  
polyester fluoro ester additive
- IT Alcohols, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(C8-14,  $\gamma$ - $\omega$ -perfluoro, esters with unsatd. acids, polymers  
with alkyd or polyester binder; coatings containing reactive fluorinated  
esters for improving **oil and water**  
**repellency**)
- IT Alcohols, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(C8-16,  $\gamma$ - $\omega$ -perfluoro, esters with unsatd. acids, polymer  
with alkyd binder; coatings containing reactive fluorinated esters for  
improving **oil and water repellency**)
- IT Fatty acids, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(canola-oil, R-910, esters with fluoro alc., polymers with alkyd  
binder; coatings containing reactive fluorinated esters for improving  
**oil and water repellency**)
- IT **Oilproofing** agents  
**Waterproofing** agents  
(coatings containing reactive fluorinated esters for improving **oil**  
**and water repellency**)
- IT Fatty acids, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(fish-oil, SAFACID UDF, esters with fluoro alc., polymers with alkyd  
binder; coatings containing reactive fluorinated esters for improving  
**oil and water repellency**)
- IT Alcohols, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(fluoro, C8-14,  $\gamma$ - $\omega$ -perfluoro, esters with unsatd. acids,  
polymers with alkyd or polyester binder; coatings containing reactive  
fluorinated esters for improving **oil and water**  
**repellency**)
- IT Alcohols, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(fluoro, C8-16,  $\gamma$ - $\omega$ -perfluoro, esters with unsatd. acids,  
polymer with alkyd binder; coatings containing reactive fluorinated esters  
for improving **oil and water repellency**)
- IT Fatty acids, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
(linseed-oil, Emery 644, Industrene 120, TRLA 50, esters with fluoro  
alc., polymers with alkyd or polyester binder; coatings containing reactive  
fluorinated esters for improving **oil and water**  
**repellency**)
- IT Coating materials  
Coating materials  
Coating materials  
(oil- and water-resistant; coatings containing reactive fluorinated esters

- for improving **oil and water repellency**)
- IT Thiols (organic), uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (perfluoro alkylethyl, esters with linseed fatty acids, polymers with alkyd binder; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Alkyd resins  
 Polyurethanes, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (reaction products with fluoro (thio)esters; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Fatty acids, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (soya, Emery 618, esters with fluoro alc., polymers with alkyd binder; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Fatty acids, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (tung-oil, esters with fluoro alc., polymers with alkyd binder; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Polyesters, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (unsatd., reaction products with fluoro (thio)esters; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Perfluoro compounds  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 ( $\gamma$ - $\omega$ -, C8-16, alcs., esters with unsatd. acids, polymer with alkyd binder; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT Perfluoro compounds  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 ( $\gamma$ - $\omega$ -perfluoro-C8-14 alcs., esters with unsatd. acids, polymers with alkyd or polyester binder; coatings containing reactive fluorinated esters for improving **oil and water repellency**)
- IT 60-33-3DP, Emersol 315, esters with fluoro alc., polymers with alkyd binder 97-65-4DP, Itaconic acid, esters with fluoro alc., polymers with alkyd binder 110-44-1DP, Sorbic acid, esters with fluoro alc., polymers with alkyd binder 112-80-1DP, Oleic acid, esters with fluoro alc., polymers with alkyd binder 126-30-7DP, Neopentyl glycol, bis-(perfluoroalkylethylmercapto) derivative, esters with linseed fatty acids, polymers with alkyd binder 140-10-3DP, trans-Cinnamic acid, esters with fluoro alc., polymers with alkyd binder 617-52-7DP, Dimethylitaconate, esters with fluoro alc., polymers with alkyd binder 2396-84-1DP, Ethyl sorbate, esters with fluoro alc., polymers with alkyd binder 24448-09-7DP, esters with unsatd. fatty acids, polymers with alkyd binder 67066-88-0DP, 2-Octadecen-1-ylsuccinic anhydride, esters with fluoro alc., polymers with alkyd binder **189243-83-2DP**, polymers with alkyd



binder

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(coatings containing reactive fluorinated esters for improving oil and water repellency)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Anon; DE 2821495 1979 HCAPLUS
- (3) Anon; EP 0068040 1983 HCAPLUS
- (4) Anon; JP 222272 1984
- (5) Anon; JP 03167158 1991 HCAPLUS
- (6) Anon; WO 9118859 1991 HCAPLUS
- (7) Anon; JP 05232718 A 1993 HCAPLUS
- (8) Anon; JP 05246951 A 1993 HCAPLUS
- (9) Anon; EP 614874 A2 1994 HCAPLUS
- (10) Anon; JP 26204 1995
- (11) Anon; EP 694532 1996 HCAPLUS
- (12) Anton; US 5637657 1997 HCAPLUS
- (13) Arioka; US 4758471 1988
- (14) Babirad; US 5087672 1992 HCAPLUS
- (15) Caporiccio; US 5350878 1994 HCAPLUS
- (16) Dear; US 4054592 1977 HCAPLUS
- (17) Dear; US 4097642 1978
- (18) Dettre; US 3923715 1975 HCAPLUS
- (19) Falk; US 4946992 1990 HCAPLUS
- (20) Fasick; US 3378609 1968
- (21) Kai; US 5188747 1993 HCAPLUS
- (22) Kirchner; US 5670573 1997 HCAPLUS
- (23) Kondo; US 4735848 1988
- (24) Langford; US 4539006 1985 HCAPLUS
- (25) Nippon Polyurethane Kogyo Kk; JP 07026204 A 1995 HCAPLUS
- (26) Paul; Surface Coatings Science and Technology P276
- (27) Pechhold; US 4958039 1990 HCAPLUS
- (28) Reynolds; US 3462296 1969
- (29) Reynolds; US 3491169 1970 HCAPLUS
- (30) Reynolds; US 4595518 1986 HCAPLUS
- (31) Steel; US 4401780 1983 HCAPLUS

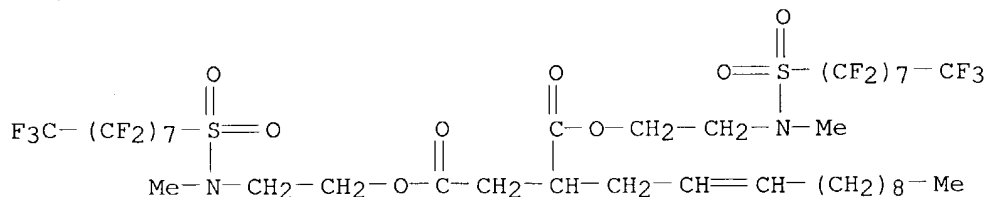
IT 189243-83-2DP, polymers with alkyd binder

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(coatings containing reactive fluorinated esters for improving oil and water repellency)

RN 189243-83-2 HCAPLUS

Butanedioic acid, 2-dodecenyl-, bis[2-[[heptadecafluorooctyl)sulfonyl]met  
hylamino]ethyl ester (9CI) (CA INDEX NAME)



L26 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:12326 HCAPLUS  
 DN 130:83186  
 ED Entered STN: 08 Jan 1999  
 TI Perfluoroalkyl halides and derivatives for surface treatment  
 IN Behr, Frederick E.; Dams, Rudolf J.; Dewitte, Johan E.; Hagen, Donald F.  
 PA Minnesota Mining & Manufacturing Company, USA  
 SO U.S., 22 pp., Cont.-in-part of U.S. Ser. No. 489,094, abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C08F018-20  
 NCL 526245000  
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 38, 40, 46

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5852148	A	19981222	US 1997-794828	19970204
	JP 2002138078	A2	20020514	JP 2001-204928	19920710
PRAI	US 1991-728184	B1	19910710		
	US 1994-314939	B3	19940929		
	US 1995-489094	B2	19950609		
	JP 1992-183345	A3	19920710		
AB	A method for treating a substrate, comprises: providing a substrate; providing a polymer comprising a plurality of pendant saturated perfluoroalkyl groups, wherein some of the perfluoroalkyl groups are straight chain and some are branched chain; and applying the polymer to the substrate; wherein 65-85% of the perfluoroalkyl groups are straight chain and about 15 to about 35% of the perfluoroalkyl groups are branched chain. These mixts. contain some compds. with a straight perfluoroalkyl group and some with a branched perfluoroalkyl group. Methods of preparation and use are also described.				
ST	perfluoroalkyl halide surface treatment agent				
IT	Surfactants (anionic-nonionic; perfluoroalkyl halides and derivs. for surface treatment)				
IT	Polyurethanes, uses RL: TEM (Technical or engineered material use); USES (Uses) (fluorine-containing, perfluoroalkyl group-containing; perfluoroalkyl halides and derivs. for surface treatment)				
IT	Polyamides, uses Polycarbodiimides Polyethers, uses Polyolefins Polyurethanes, uses RL: TEM (Technical or engineered material use); USES (Uses) (perfluoroalkyl group-containing; perfluoroalkyl halides and derivs. for surface treatment)				
IT	<b>Oilproofing</b> agents Polymerization Textiles Water-resistant materials (perfluoroalkyl halides and derivs. for surface treatment)				
IT	Fluoropolymers, uses Fluoropolymers, uses RL: TEM (Technical or engineered material use); USES (Uses)				

(polyurethane-, perfluoroalkyl group-containing; perfluoroalkyl halides and derivs. for surface treatment)

IT Carpets  
Ceramics  
Paper

(substrate; perfluoroalkyl halides and derivs. for surface treatment)

IT Glass, miscellaneous  
Metals, miscellaneous  
Plastics, miscellaneous  
RL: MSC (Miscellaneous)

(substrate; perfluoroalkyl halides and derivs. for surface treatment)

IT 27854-31-5P 27905-45-9P 30389-25-4P 38436-14-5P 38436-18-9P  
38565-53-6P 52591-27-2P 81190-28-5P 150940-84-4P  
RL: IMF (Industrial manufacture); PREP (Preparation)

(perfluoroalkyl halides and derivs. for surface treatment)

IT 423-60-9P, Perfluorooctanesulfonyl chloride 423-62-1P,  
Perfluorodecyl iodide 678-39-7P 865-86-1P 1693-71-6P, Triallyl borate  
2043-47-2P 2043-54-1P 34143-74-3P 34451-25-7P 34451-28-0P  
80233-96-1P 133299-39-5P 150940-83-3P 218462-37-4P 218462-40-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(perfluoroalkyl halides and derivs. for surface treatment)

IT 107-19-7DP, Propargyl alcohol, reaction products with  
perfluoroalkylethanethiols, phosphate esters, ammonium salts 107-19-7DP,  
Propargyl alcohol, reaction products with perfluoroalkylthiols and PAPI  
9003-11-6DP, mono[ $\omega$ -(heptadecafluorodecyl)thio]alkyl ethers  
9016-87-9DP, PAPI, reaction products with perfluoroalkyl alcs.  
27905-45-9DP, reaction products with PAPI 34143-74-3DP, reaction  
products with methoxymethylmelamines, propargyl alc. and PAPI  
34451-25-7DP, reaction products with propargyl alc., phosphate esters,  
ammonium salts **54949-95-0P** 58228-15-2P 62097-34-1DP,  
Ethylene glycol-PAPI copolymer, reaction products with  
perfluoroalkylethanols 62880-96-0P 62880-97-1P 63225-57-0P  
99332-32-8P 118570-75-5P 149759-83-1P 150940-87-7P 150944-46-0P  
150944-47-1P 150953-92-7P 150956-37-9P **189398-01-4DP**,  
phosphate esters, ammonium salts 218462-55-6P 218462-56-7P  
218462-57-8P 218462-58-9DP, reaction products with propane sultone  
218462-59-0P 218462-60-3P 218462-61-4P 218462-62-5P 218462-64-7P  
218462-65-8DP, reaction products with propane sultone 218462-66-9P  
218462-67-0P 218462-68-1P 218462-69-2P 218605-22-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)

(perfluoroalkyl halides and derivs. for surface treatment)

IT 62-56-6, Thiourea, reactions 74-85-1, Ethene, reactions 107-15-3,  
Ethylene diamine, reactions 107-18-6, 2-Propen-1-ol, reactions  
109-55-7 307-51-7, Perfluorodecanesulfonyl fluoride 814-68-6, Acryloyl  
chloride 3089-11-0D, Hexamethoxymethyl melamine, reaction products with  
perfluoroalkylethylthiols 6915-15-7, Malic acid 7553-56-2, Iodine,  
reactions 10043-35-3, Boric acid, reactions 15214-89-8 32779-61-6  
40630-30-6 55591-23-6, Perfluorohexanesulfonyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)

(perfluoroalkyl halides and derivs. for surface treatment)

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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- (2) Ahlbrecht; US 2803656 1957 HCAPLUS
- (3) Anon; GB 904263 1962 HCAPLUS
- (4) Anon; EP 0142041 A1 1985 HCAPLUS

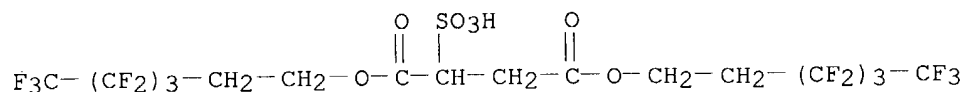
- (5) Anon; JP 61209286 1986 HCAPLUS
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- (9) Anon; JP 6445411 1989
- (10) Anon; JP 532712 1993
- (11) Anon; 3M Company trade bulletin 98-0211-2213-4 (38.3) BPH 1988
- (12) Anon; Journal of Fluorine Chemistry 1989, V43(2), P291
- (13) Anon; The Journal of Organic Chemistry 1958, V23, P1166
- (14) Anon; The Journal of Organic Chemistry 1988, V53(24), P5714
- (15) Banitt; US 3532674 1970 HCAPLUS
- (16) Banks, R; Ellis Horwood Ltd 1979, P213
- (17) Berger; US 4359096 1982
- (18) Bernett, M; J Phys Chem 1967, V71, P2075 HCAPLUS
- (19) Billenstein; US 4167639 1979 HCAPLUS
- (20) Brice; US 2732398 1956 HCAPLUS
- (21) Brown; US 2759019 1956 HCAPLUS
- (22) Brown; US 2950317 1960 HCAPLUS
- (23) Bultman; US 4484990 1984 HCAPLUS
- (24) Caporiccio; US 5350878 1994 HCAPLUS
- (25) Chang; US 3540126 1970 HCAPLUS
- (26) Chang; US 4540497 1985 HCAPLUS
- (27) Chang; US 4668406 1987 HCAPLUS
- (28) Day; US 3283012 1966 HCAPLUS
- (29) Dear; US 4158672 1979 HCAPLUS
- (30) Diesslin; US 2567011 1951 HCAPLUS
- (31) Falk; US 5091550 1992 HCAPLUS
- (32) Falk; US 5132445 1992 HCAPLUS
- (33) Feiring; US 5260492 1993 HCAPLUS
- (34) Feiring; US 5326917 1994 HCAPLUS
- (35) Francen; US 3562156 1971
- (36) Fuchikami; US 5151535 1992 HCAPLUS
- (37) Guenthner; US 3398182 1968 HCAPLUS
- (38) Hager; US 3532659 1970 HCAPLUS
- (39) Heine; US 3094547 1963
- (40) Husted; US 2666797 1954 HCAPLUS
- (41) Husted; US 2691043 1954 HCAPLUS
- (42) Katsushima; US 3499940 1970
- (43) Katsushima; US 3525758 1970
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- (46) Landucci; US 4024178 1977 HCAPLUS
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- (48) Park, J; Free-Radical Catalyzed Addition of Unsaturated Alcohols to  
Perhaloalkanes 1961, P2089 HCAPLUS
- (49) Pavlik; US 3420877 1969 HCAPLUS
- (50) Schwenk; US 4219681 1980 HCAPLUS
- (51) Simons; US 2519983 1950 HCAPLUS
- (52) Stern; US 4606737 1986 HCAPLUS
- (53) Tiers; US 2972638 1961 HCAPLUS

IT 54949-95-0P 189398-01-4DP, phosphate esters, ammonium salts

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(perfluoroalkyl halides and derivs. for surface treatment)

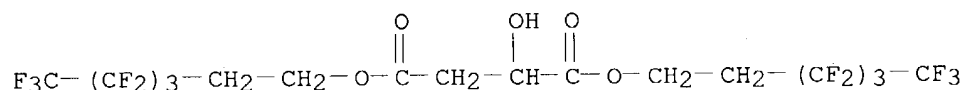
RN 54949-95-0 HCAPLUS

CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl)  
ester, sodium salt (9CI) (CA INDEX NAME)



● Na

RN 189398-01-4 HCAPLUS  
 CN Butanedioic acid, hydroxy-, bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl) ester  
 (9CI) (CA INDEX NAME)



L26 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:407646 HCAPLUS

DN 129:137349

ED Entered STN: 03 Jul 1998

TI Coating compositions having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.

IN Sato, Koji

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D161-14

ICS C08K005-103

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10168383	A2	19980623	JP 1996-298476	19961111
	JP 3376837	B2	20030210		
PRAI	JP 1996-265714	A	19961007		
OS	MARPAT 129:137349				

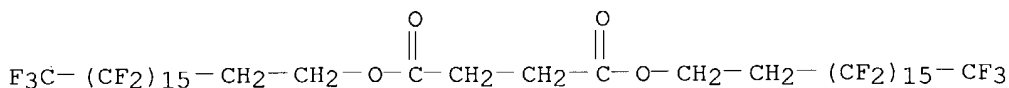
AB The title compns. contain (A) rosin-modified phenolic resins, (B) fluorinated drying oil, and/or (C) fluorinated drying oil fatty acid esters, and (D) thinners. A fluorinated drying oil (acid value 4.8) was prepared from soya oil 880, glycerin 62, NaOMe 0.5, perfluoropropionic acid 328 parts, and used (14 parts) with rosin-modified cresol resol 45, Number 3 solvent 40, and ALCH 1 part to give a varnish. A coating composition comprised Lionol Red FG4213 18, Co drier 1, the above varnish 56, and No.3 solvent 24 parts.

ST **water repellent** printable antiblocking antiabrasion coating; fluorinated drying oil coating

IT Coating materials  
 (abrasion-resistant; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**)

- , and wipe off properties.)
- IT Coating materials  
(blocking-resistant; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Phenolic resins, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Esters, uses  
Glycerides, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Fatty acids, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(linseed-oil, fluoro alc. esters; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Rosin  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(phenolic resins modified by; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Coating materials  
(printable, wipeable; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Linseed oil  
Soybean oil  
Tung oil  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(reaction products with glycerin and perfluorocarboxylic acids; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Coconut oil  
Cottonseed oil  
Tallow  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(reaction products with perfluorocarboxylic acids and glycerin; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Fatty acids, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(soya, fluoro alc. esters; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)

- IT Fatty acids, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (tung-oil, fluoro alc. esters; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT Coating materials  
 (water-resistant; coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT 115-77-5DP, phenolic resins modified by rosin and 198226-93-6DP, reaction products with rosin and pentaerythritol 198226-97-0DP, reaction products with rosin and pentaerythritol 198227-01-9DP, reaction products with rosin and pentaerythritol 210491-67-1DP, reaction products with rosin and pentaerythritol  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT 56-81-5DP, 1,2,3-Propanetriol, reaction products with vegetable oils and perfluorocarboxylic acids, uses 375-85-9DP, reaction products with vegetable oils and glycerin 422-64-0DP, reaction products with vegetable oils and glycerin 647-42-7DP, 2-(Perfluorohexyl)ethanol, fatty acid esters 865-86-1DP, 2-(Perfluorodecyl)ethanol, fatty acid esters 2058-94-8DP, reaction products with vegetable oils and glycerin 39239-77-5DP, 2-(Perfluorododecyl)ethanol, fatty acid esters 54949-74-5DP, 2-(Perfluoroethyl)ethanol, fatty acid esters 57475-95-3DP, reaction products with vegetable oils and glycerin 65104-67-8DP, fatty acid esters 72629-94-8DP, reaction products with vegetable oils and glycerin 125768-41-4P 210491-01-3P 210491-02-4P 210491-03-5P 210491-06-8P 210491-08-0P **210491-68-2P** 210491-69-3P 210491-70-6P 210491-71-7P 210491-72-8P 210491-73-9P 210491-74-0P 210491-75-1P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- IT **210491-68-2P**  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating compns. having excellent abrasion and blocking resistance, printability, **water repellency**, and wipe off properties.)
- RN 210491-68-2 HCAPLUS
- CN Butanedioic acid, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorooctadecyl) ester (9CI)  
 (CA INDEX NAME)

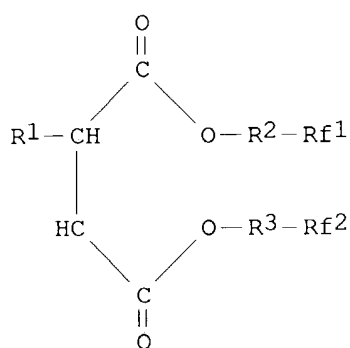


L26 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

AN 1997:802097 HCAPLUS  
 DN 128:102949  
 ED Entered STN: 24 Dec 1997  
 TI Di(fluoroalkyl) succinates as **waterproofing** and  
 tackiness-reducing agents for polymers  
 IN Iriya, Takehiko; Totsuka, Tomoki; Shimomura, Masahiro  
 PA Wako Pure Chemical Industries, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C07C069-63  
 CC 37-6 (Plastics Manufacture and Processing)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09323956	A2	19971216	JP 1996-160832	19960531
PRAI	JP 1996-160832		19960531		
OS	MARPAT 128:102949				
GI					



AB Di(fluoroalkyl) succinates I (R1 = C11-24 alkyl; R2, R3 = C1-6 alkylene; Rf1, Rf2 = C1-20 fluoroalkyl), I (R1 = C8-10 alkyl; R2, R3 = same as above; Rf1, Rf2 = C8-20 fluoroalkyl), and I (R1 = C8-10 alkyl; R2, R3 = C2-6 alkylene; Rf1, Rf2 = C1-7 fluoroalkyl) are claimed. Polymers blended with the succinates show good resistance to interlayer peeling and bleeding, improved **waterproofing** properties, and reduced tackiness and surface slipperiness. Thus, a plate comprising acrylonitrile-vinylidene chloride copolymer and 1% (vs. the copolymer) di(perfluorooctylethyl) octadecylsuccinate showed face contact angle 101°, 51°, and 43° against water, MeI, and hexadecane, resp.

ST **waterproof**er tackiness redn fluoroalkyl succinate; interlayer peeling bleeding resistance fluoroalkyl succinate; acrylonitrile copolymer perfluorooctylethyl octadecylsuccinate **waterproof**er; vinylidene chloride copolymer perfluorooctylethyl octadecylsuccinate **waterproof**er

IT **Waterproofing** agents  
 (di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

IT Fluoropolymers, properties  
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)



(di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

IT 201019-07-0P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)  
 (di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

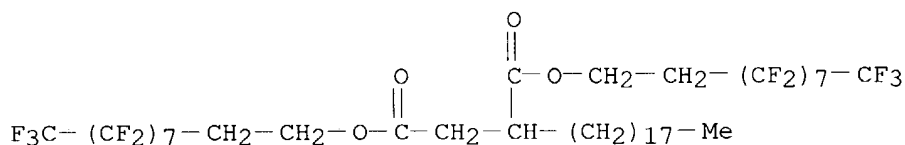
IT 9010-76-8, Acrylonitrile-vinylidene chloride copolymer  
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
 (di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

IT 678-39-7, Perfluorooctylethanol 47458-32-2, Octadecylsuccinic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

IT 201019-07-0P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)  
 (di(fluoroalkyl) succinates as **waterproofing** and tackiness-reducing agents for polymers)

RN 201019-07-0 HCAPLUS

CN Butanedioic acid, octadecyl-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:332379 HCAPLUS

DN 126:306411

ED Entered STN: 26 May 1997

TI Coatings containing reactive fluorinated ester oil- and **water-**  
**proofing** agents

IN Anton, Douglas Robert; Kirchner, Jack Robert; Bennett, William Wesley, Jr.

PA E. I. Du Pont de Nemours & Co., USA

SO PCT Int. Appl., 39 pp.  
 CODEN: PIXXD2

DT Patent

LA English

IC ICM C09D167-08  
 ICS C09D167-06; C09D175-04; C07C311-24

CC 42-5 (Coatings, Inks, and Related Products)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9711135	A1	19970327	WO 1996-US14629	19960912
	W: AU, CA, JP, KR, MX, NZ				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5637657	A	19970610	US 1995-529899	19950918
	US 5859126	A	19990112	US 1996-704487	19960807
	AU 9669755	A1	19970409	AU 1996-69755	19960912
	AU 714866	B2	20000113		

EP 851903	A1	19980708	EP 1996-930846	19960912
EP 851903	B1	19990602		
R: BE, CH, DE, DK, FR, GB, IT, LI, NL				
JP 2000506552	T2	20000530	JP 1997-512779	19960912

PRAI US 1995-529899 19950918  
 US 1996-704487 19960807  
 WO 1996-US14629 19960912

AB Coating compns. containing an alkyd, urethane or unsatd. polyester resin, and an ester of an unsatd. acid and a fluorinated alc. or thiol give the cured coating having an advancing hexadecane contact angle .gtorsim.40° and durable improved **oil** and **H2O repellency**.  
 Thus, linseed oil fatty acids were heated with Zonyl BA at 145° 45 h in the presence of 70% aqueous phosphorous acid to give a fluoro ester for adding to alkyd paint (until a F concentration is 1000 µg/g). The cured paint (applied over Leneta panels) showed advancing hexadecane contact angle 81° and 70° after washing.

ST wash resistant **oil repellency** polymer coating;  
 perfluoroalkyl alkenoate ester additive coating; polyurethane coating  
**waterproofing oilproofing**; alkyd coating  
**waterproofing oilproofing**; unsatd polyester  
**waterproofing oilproofing**

IT Alcohols, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (C8-14, γ-ω-perfluoro, Zonyl BA, esters with unsatd. acid, reaction products with resin binder; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT Alcohols, uses  
 Alcohols, uses.  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (C8-16, γ-ω-perfluoro, Zonyl BA-N, esters with unsatd. acids, reaction products with binder resins; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT Fatty acids, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (canola-oil, R 910, perfluoroalkyl esters, reaction products with alkyd resin binders; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT Coating materials  
 (durable oil-resistant; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT Fatty acids, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (fish-oil, Safacid U, Safacid UDF, perfluoroalkyl esters, reaction products with alkyd resin binders; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT **Oilproofing** agents  
 (fluoro ester or fluoro thio ester compds.; coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT Fatty acids, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (linseed-oil, Emery 644, Industrene 120, TRLA 50, perfluoroalkyl esters, reaction products with alkyd resin binders; coatings containing reactive fluorinated ester oil- and **water-proofing**

- agents)
- IT Thiols (organic), uses  
 Thiols (organic), uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (perfluoro, esters with linseed fatty acids, reaction products with  
 binder resins; coatings containing reactive fluorinated ester oil- and  
**water-proofing** agents)
- IT Alkyd resins  
 Polyurethanes, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (reaction products with fluoro esters; coatings containing reactive  
 fluorinated ester oil- and **water-proofing** agents)
- IT Fatty acids, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (soya, perfluoroalkyl esters, reaction products with alkyd resin  
 binder; coatings containing reactive fluorinated ester oil- and  
**water-proofing** agents)
- IT Perfluoro compounds  
 Perfluoro compounds  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (thiols, esters with linseed fatty acids, reaction products with binder  
 resins; coatings containing reactive fluorinated ester oil- and  
**water-proofing** agents)
- IT Fatty acids, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (tung-oil, Me perfluoroalkyl esters, reaction products with alkyd resin  
 binder; coatings containing reactive fluorinated ester oil- and  
**water-proofing** agents)
- IT Polyesters, uses  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (unsatd., reaction products with fluoro esters; coatings containing  
 reactive fluorinated ester oil- and **water-proofing**  
 agents)
- IT Perfluoro compounds  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 ( $\gamma$ - $\omega$ -, C8-16, alcs., Zonyl BA-N, esters with unsatd. acids,  
 reaction products with binder resins; coatings containing reactive  
 fluorinated ester oil- and **water-proofing** agents)
- IT 60-33-3D, 9,12-Octadecadienoic acid (Z,Z)-, ester with perfluoroalkyl  
 alcs., reaction products with alkyd resin binder 97-65-4D, ester with  
 perfluoroalkyl alcs., reaction products with alkyd resin binder  
 110-44-1D, Sorbic acid, ester with perfluoroalkyl alcs., reaction products  
 with alkyd resin binder 112-80-1D, Oleic acid, ester with perfluoroalkyl  
 alcs., reaction products with alkyd resin binder 126-30-7D,  
 perfluoroalkyl ethylmercapto derivative, ester with linseed fatty acids,  
 reaction products with binder resin 140-10-3D, trans-Cinnamic acid,  
 ester with perfluoroalkyl alcs., reaction products with alkyd resin binder  
 617-52-7D, Dimethyl itaconate, ester with perfluoroalkyl alcs., reaction  
 products with alkyd resin binder 2396-84-1D, Ethyl sorbate, ester with  
 perfluoroalkyl alcs., reaction products with alkyd resin binder  
 24448-09-7D, ester with linseed fatty acids, reaction products with binder

resin 67066-88-0D, 2-Octadecen-1-yl succinic anhydride, ester with  
perfluoroalkyl alcs., reaction products with alkyd resin binder  
**189243-83-2D**, reaction products with binder resin  
RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

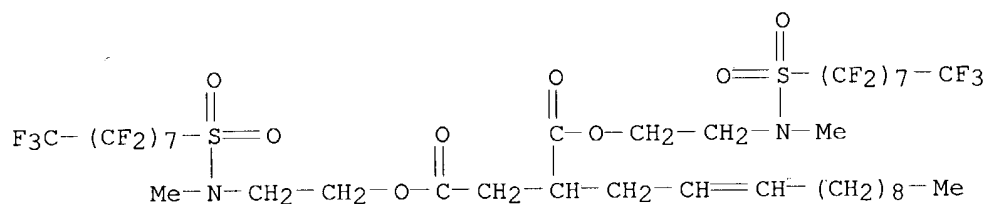
(coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

IT **189243-83-2D**, reaction products with binder resin  
RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

(coatings containing reactive fluorinated ester oil- and **water-proofing** agents)

RN 189243-83-2 HCAPLUS

Butanedioic acid, 2-dodecenyl-, bis[2-[(heptadecafluorooctyl)sulfonyl]methylanilino]ethyl ester (9CI) (CA INDEX NAME)



L26 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:136059 HCAPLUS

DN 120:136059

ED Entered STN: 19 Mar 1994

TI Perfluoroalkyl halides and derivatives as precursors for **oil and water repellants** and surfactants

IN Behr, Frederick E.; Dams, Rudolf J.; DeWitte, Johan E.; Hagen, Donald F.

PA Minnesota Mining and Manufacturing Co., USA

SO Can. Pat. Appl., 67 pp.

CODEN: CPXXEB

DT Patent

LA English

IC ICM C08L027-12

ICS C09D004-00; C09D127-12; C09D175-04; C08L075-04

CC 37-2 (Plastics Manufacture and Processing)

Section cross-reference(s): 23, 40, 46

FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2071596	AA	19930111	CA 1992-2071596	19920618
EP 526976	A1	19930210	EP 1992-305710	19920622
EP 526976	B1	19970115		

R: BE, CH, DE, FR, GB, IT, LI, NL

JP 05345732 A2 19931227 JP 1992-183345 19920710

JP	3231844	B2	20011126
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JP 2002138078 A2 20020514 JP 2001-204928 19920710

PRAI	US	1991-728184	A	19910710
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JP 1992-183345 A3 19920710

OS MARPAT 120:136059

AB The title compds. comprise a mixture of straight and branched perfluoroalkyl groups bonded to Cl, Br, or I through a F-free alkylene group.

Perfluorodecyltetrahydroiodide (prepared from perfluorosulfonyl fluoride, 40% straight and 60% branched, treated first with I, then with C<sub>2</sub>H<sub>4</sub>) was derivatized to thiol functionality by treatment with thiourea in EtOH to give perfluorodecyltetrahydrothiol (I). I was added to a reaction mixture containing hexamethoxymethylmelamine to give a I-melamine condensate (II, 1:4 mol ratio). A 50/50 polyester/cotton fabric blend was treated with an emulsion of II at 0.3%, dried and cured at 150°, to give a fabric with oil resistance (AATCC 118-1975) 5 and 5 after 1 dry cleaning, vs. 3 and 2, resp., for a precursor perfluorodecyltetrahydroiodide having all straight chain perfluoroalkyl groups.

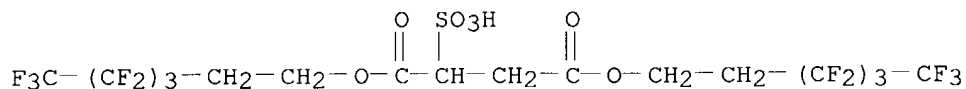
- ST perfluoroalkyl halide prepn deriv; perfluorodecyltetrahydroiodide reaction thiourea; melamine perfluorothiol condensate treatment fabric;  
**water repellent** perfluoroalkyl halide deriv; **oil repellent** perfluoroalkyl halide deriv; surfactant perfluoroalkyl halide deriv
- IT Water-resistant materials  
(fluorochem. compds. containing perfluoroalkyl groups, for textiles)
- IT Surfactants  
(amphoteric, fluorochem. compds. containing linear and branched perfluoroalkyl groups, preparation of)
- IT Surfactants  
(anionic, fluorochem. compds. containing linear and branched perfluoroalkyl groups, preparation of)
- IT Textiles  
(cotton-polyester, **water repellent** agents for, chlorochem. intermediate as, containing perfluoroalkyl groups)
- IT Polyoxyalkylenes, preparation  
RL: PREP (Preparation)  
(fluorine-containing, containing linear and branched perfluoroalkyl groups, preparation of, for manufacture of nonionic surfactants)
- IT Surfactants  
(nonionic, fluorochem. compds. containing linear and branched perfluoroalkyl groups, preparation of)
- IT Fluoropolymers  
RL: PREP (Preparation)  
(polyoxyalkylene-, containing linear and branched perfluoroalkyl groups, preparation of, for manufacture of nonionic surfactants)
- IT 109-55-7 111-40-0, Diethylene triamine 112-24-3, Triethylene tetramine  
RL: USES (Uses)  
(linear and branched, Michael addition of, with perfluoroalkyltetrahydroacrylate)
- IT 678-39-7P  
RL: PREP (Preparation)  
(linear and branched, preparation and conversion of to acrylate)
- IT 865-86-1P 2043-47-2P 27854-31-5P 27905-45-9P 30389-25-4P  
34143-74-3P 34451-25-7P 34451-28-0P 38565-53-6P 52591-27-2P  
80233-96-1P 81190-28-5P  
RL: PREP (Preparation)  
(linear and branched, preparation of)
- IT 150944-47-1P  
RL: PREP (Preparation)  
(linear and branched, preparation of, as anionic nonionic surfactant)
- IT 9003-11-6DP, thioethers with tetrahydroperfluorodecanethiol  
34143-74-3DP, reaction products with ethylene oxide-propylene oxide copolymer 58228-15-2P 150997-16-3P  
RL: PREP (Preparation)  
(linear and branched, preparation of, as nonionic surfactant)
- IT 150909-45-8P 150909-46-9P 150940-87-7P

- RL: PREP (Preparation)  
(linear and branched, preparation of, as surfactant)
- IT 107-19-7DP, 2-Propyn-1-ol, reaction products with perfluorooctyltetrahydrothiol, urethane acrylate derivative 678-39-7DP, oligomeric urethane derivative 3089-11-0DP, Hexamethoxymethyl melamine, reaction product with perfluorooctyltetrahydrothiol 9016-87-9DP, Polymethylene polyphenylene isocyanate, reaction product with perfluorooctyltetrahydro alc. 26471-62-5DP, TDI, reaction product with propargyl alc. adduct with perfluorooctyltetrahydrothiol 27905-45-9DP, urethane acrylate derivative 34143-74-3DP, reaction products with propargyl alc., urethane acrylate derivative
- RL: PREP (Preparation)  
(linear and branched, preparation of, as treatment agent for fibers for water resistance)
- IT 2043-53-0P 2043-54-1P 2043-55-2P 2043-57-4P  
RL: PREP (Preparation)  
(linear and branched, preparation of, derivs. from)
- IT 9004-74-4DP, Polyethylene glycol methyl ether, Michael adduct with perfluoroalkyltetrahydrothiol **54949-95-0P** 149759-83-1P 150940-85-5DP, Michael adduct with perfluoroalkyltetrahydrothiol 150944-46-0P 150953-92-7DP, Michael adduct with perfluoroalkyltetrahydrothiol 150956-33-5P
- RL: PREP (Preparation)  
(linear and branched, preparation of, for surfactant)
- IT 110-17-8DP, 2-Butenedioic acid (E)-, reaction products with perfluorobutylethyl acrylate and AMPS 111-40-0DP, reaction products with perfluorobutylethyl acrylate and AMPS 112-24-3DP, reaction products with perfluorobutylethyl acrylate and AMPS 52591-27-2DP, reaction products with ethylenediamine and AMPS 63225-57-0P 93776-20-6P 93857-44-4P 148390-66-3DP, reaction products with perfluorobutylethyl acrylate and ethylenediamine 149790-22-7P 150940-86-6P 150953-94-9P 150956-34-6P 150956-35-7P 150956-36-8P 150956-37-9P **151030-75-0DP**, phosphate ester, ammonium salts 153326-51-3DP, phosphate ester, ammonium salts
- RL: PREP (Preparation)  
(linear and branched, preparation of, for surfactants)
- IT 423-60-9, Perfluorooctanesulfonyl chloride 423-62-1, Perfluorodecyl iodide 32779-61-6 38436-14-5 40630-30-6 55591-23-6, Perfluorohexanesulfonyl chloride 133299-39-5 150940-83-3 150940-84-4
- RL: USES (Uses)  
(linear and branched, reaction of, with ethylene)
- IT 307-35-7, Perfluorooctanesulfonyl fluoride 307-51-7, Perfluorodecane sulfonyl fluoride 375-72-4, Perfluorobutanesulfonyl fluoride 423-50-7, Perfluorohexanesulfonyl fluoride
- RL: USES (Uses)  
(linear and branched, reaction of, with iodine and ethylene)
- IT 74-85-1, Ethylene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(linear and branched, reaction of, with perfluoroalkyl iodide)
- IT 814-68-6, Acryloyl chloride  
RL: USES (Uses)  
(linear and branched, reaction of, with perfluoroalkyltetrahydro alc.)
- IT 107-15-3, Ethylene diamine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(linear and branched, reaction of, with perfluorooctyltetrahydroacrylate)
- IT **54949-95-0P**  
RL: PREP (Preparation)

(linear and branched, preparation of, for surfactant)

RN 54949-95-0 HCAPLUS

CN Butanedioic acid, sulfo-, 1,4-bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl) ester, sodium salt (9CI) (CA INDEX NAME)



● Na

IT 151030-75-ODP, phosphate ester, ammonium salts

RL: PREP (Preparation)

(linear and branched, preparation of, for surfactants)

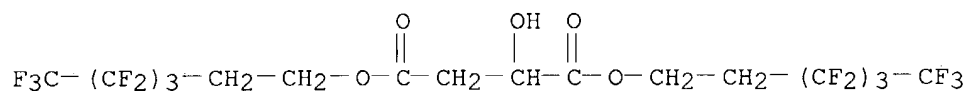
RN 151030-75-0 HCAPLUS

CN Butanedioic acid, hydroxy-, bis(3,3,4,4,5,5,6,6,6-nonafluorohexyl) ester, phosphate, ammonium salt (9CI) (CA INDEX NAME)

CM 1

CRN 189398-01-4

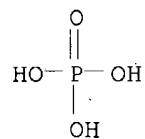
CMF C16 H12 F18 O5



CM 2

CRN 7664-38-2

CMF H3 O4 P



L26 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1982:90665 HCAPLUS

DN 96:90665

ED Entered STN: 12 May 1984

TI Concrete mixture

IN Orentlikher, L. P.; Gorchakov, G. I.; Andreeva, A. B.; Voronov, S. V.; Gol'din, G. S.; Averbakh, K. O.; Nekrasova, L. A.; Dergachev, N. N.

PA USSR

SO U.S.S.R.

From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1981, (31), 103.

CODEN: URXXAF

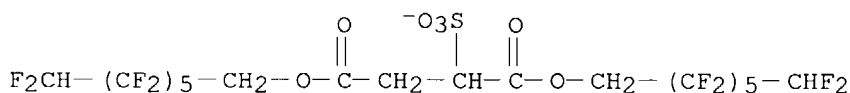
DT Patent  
 LA Russian  
 IC C04B013-24  
 CC 58-2 (Cement, Concrete, and Related Building Materials)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 857050	A1	19810823	SU 1979-2859244	19791111
PRAI	SU 1979-2859244		19791111		
AB	A mixture containing portland cement 9-20, inorg. filler 71-84, and triethylbenzylammonium bis(1,1,7-trihydrododecafluoroheptyl) sulfosuccinate [80550-21-6] 0.03-0.35 weight%, and the balance H2O gives concrete with a stable plasticizing effect with time and <b>water-repellent</b> properties.				
ST	plasticizer concrete ethylbenzylammonium fluoroheptyl sulfosuccinate				
IT	Plasticizers (ethylbenzylammonium fluoroheptyl sulfosuccinate, for concrete)				
IT	Concrete (plasticizers for, ethylbenzylammonium fluoroheptyl sulfosuccinate)				
IT	<b>80550-21-6</b> RL: TEM (Technical or engineered material use); USES (Uses) (plasticizers, for concrete)				
IT	<b>80550-21-6</b> RL: TEM (Technical or engineered material use); USES (Uses) (plasticizers, for concrete)				
RN	80550-21-6 HCAPLUS				
CN	Benzenemethanaminium, N,N,N-triethyl-, salt with 1,4-bis(2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptyl) sulfobutanedioic acid (1:1) (9CI) (CA INDEX NAME)				

CM 1

CRN 80550-20-5

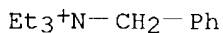
CMF C18 H9 F24 O7 S



CM 2

CRN 16652-03-2

CMF C13 H22 N



L26 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1976:578932 HCAPLUS  
 DN 85:178932  
 ED Entered STN: 12 May 1984  
 TI Perfluoroalkyl alcohols



IN Kleiner, Eduard K.; Falk, Robert A.  
 PA Ciba-Geigy Corp., USA  
 SO U.S., 12 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC C07C149-20  
 NCL 260481000R  
 CC 39-10 (Textiles)

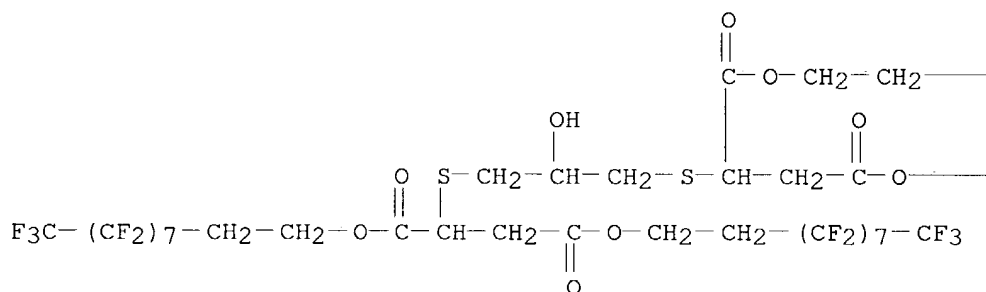
Section cross-reference(s): 23

FAN.CNT 2

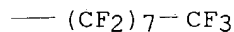
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3965148	A	19760622	US 1975-574496	19750505
PRAI	US 1972-281084		19720816		
	US 1974-493362		19740731		
AB	The alc., useful as <b>oil and water repellents</b> on cotton textiles, are prepared by addition of C2-4 mercapto alcs. to bis(polyfluoroalkyl) fumarates. Thus, bis(1,1,2,2-tetrahydroperfluorodecyl) fumarate [33072-51-4] 5.04, 2-mercaptoethanol [60-24-2] 0.390, Et3N 0.10, and MeCCl3 15 g in a sealed ampule were heated 16 hr at 60° to give 61% bis(1,1,2,2-tetrahydroperfluoroethyl) [(2-hydroxyethyl)thio]succinate [60699-52-7].				
ST	fluoroalkyl ester alc; cotton <b>oil water repellent</b>				
IT	Oils				
	RL: USES (Uses)				
	(-proofing, agents for, fluorinated ester alcs. as)				
IT	<b>Waterproofing</b>				
	(agents for, fluorinated ester alcs. as)				
IT	Textiles				
	(oil and water repellents for, fluorinated ester alcs. as)				
IT	2-Butenedioic acid (E)-, diesters with polyfluoroalkyl alc.				
	Butanedioic acid, 2,2'-[(2,3-dihydroxy-1,4-butanediyl)bis(thio)]bis-, bis(fluoroalkyl) esters				
	Butanedioic acid, [(2,3-dihydroxypropyl)thio]-, bis(fluoroalkyl) esters				
	Butanedioic acid, [(2-hydroxyethyl)thio]-, bis(fluoroalkyl) esters				
	Dion DPM 1002, reaction products with bis(fluoroalkyl) fumarates				
	Dion DPM 3-800LC, reaction products with bis(fluoroalkyl) fumarates				
	Dion DPM 5-1300, reaction products with bis(polyfluoroalkyl) fumarates				
	RL: IMF (Industrial manufacture); PREP (Preparation)				
	(preparation of)				
IT	26167-01-1P				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(preparation and hydrolysis of)				
IT	17419-64-6P	26166-99-4P			
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(preparation and reaction with fumaryl chloride)				
IT	24120-17-0P	24120-18-1P	24120-19-2P	24120-20-5P	24120-21-6P
	24120-22-7P	24120-23-8P	24120-24-9P	24120-25-0P	24120-26-1P
	<b>52978-19-5P 52978-20-8P 60699-52-7P</b>				
	RL: IMF (Industrial manufacture); PREP (Preparation)				
	(preparation of)				
IT	7634-42-6				
	RL: RCT (Reactant); RACT (Reactant or reagent)				

(reaction of, with bis(tetrahydroperfluorodecyl) fumarate)  
 IT 307-30-2 375-01-9 647-42-7 678-39-7 755-02-2 865-86-1 920-66-1  
 2043-47-2 39239-77-5 60699-51-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with fumaryl chloride)  
 IT 60-24-2 96-27-5 584-04-3 52978-23-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with heptadecafluorodecanol)  
 IT 33072-51-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with mercapto alcs.)  
 IT 29420-09-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with mercaptoethanol)  
 IT 1663-67-8 1931-60-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with pentadecafluorooctanol)  
 IT 627-63-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with polyfluoroalkyl alc.)  
 IT 25291-12-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with silver nitrate)  
 IT 2043-52-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with thiourea)  
 IT 52978-19-5P 52978-20-8P 60699-52-7P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of)  
 RN 52978-19-5 HCAPLUS  
 CN Butanedioic acid, 2,2'-[(2-hydroxy-1,3-propanediyl)bis(thio)]bis-,  
 tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester  
 (9CI) (CA INDEX NAME)

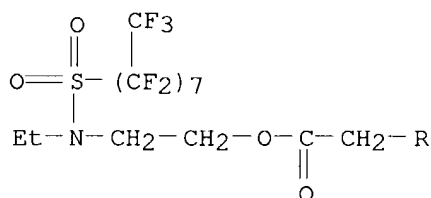
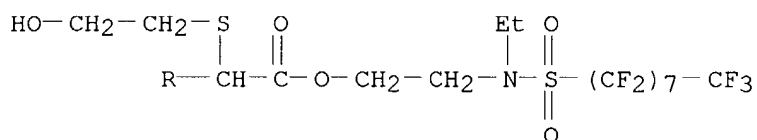
PAGE 1-A



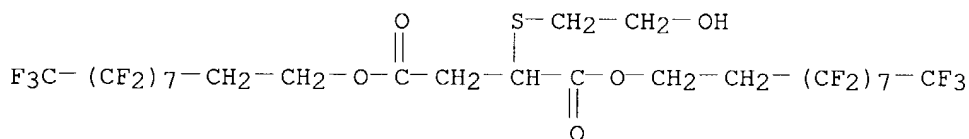
PAGE 1-B



RN 52978-20-8 HCAPLUS  
 CN Butanedioic acid, [(2-hydroxyethyl)thio]-, bis[2-  
 [ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl] ester (9CI) (CA INDEX  
 NAME)



RN 60699-52-7 HCAPLUS  
 CN Butanedioic acid, [(2-hydroxyethyl)thio]-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1974:553046 HCAPLUS  
 DN 81:153046  
 ED Entered STN: 12 May 1984  
 TI Perfluoroalkyl carboxylic acids  
 IN Kleiner, Eduard K.; Falk, Robert A.  
 PA Ciba-Geigy A.-G.  
 SO Ger. Offen., 37 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 IC C07C

CC 35-2 (Synthetic High Polymers)  
Section cross-reference(s): 23

FAN.CNT 1

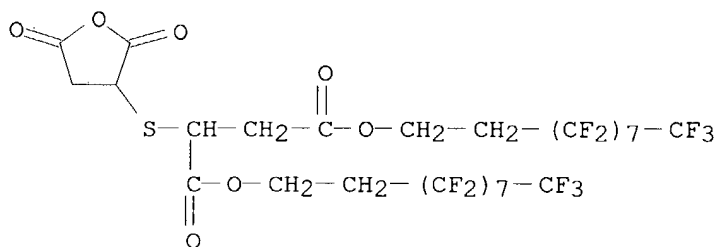
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2338381	A1	19740228	DE 1973-2338381	19730728
	US 3819666	A	19740625	US 1972-281085	19720816
PRAI	US 1972-281085		19720816		
AB	3-[1,2-Bis(1,1,2,2-tetrahydroperfluorodecyloxycarbonyl)ethylthio]propionic acid (I) [52978-18-4], RCH <sub>2</sub> CH <sub>2</sub> O <sub>2</sub> CCH(SCH <sub>2</sub> CH <sub>2</sub> CO <sub>2</sub> H)CH <sub>2</sub> CO <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> R <sub>1</sub> (R and R <sub>1</sub> = C <sub>6</sub> F <sub>13</sub> -C <sub>8</sub> F <sub>17</sub> -C <sub>10</sub> F <sub>21</sub> mixture), [1,2-bis(1,1,2,2-tetrahydroperfluorodecyloxycarbonyl)ethylthio]succinic acid (II) [53051-36-8], [1,2-bis[2-[(ethyl)(perfluorooctylsulfonyl)amino]ethoxycarbonyl]ethylthio]succinic acid [52978-15-1], 5 similar compds., and 4 derivs. (esters and anhydrides) of these compds., useful for preparing <b>oil-</b> and <b>water-repellent</b> compns., were prepared Thus, a mixture of bis(1,1,2,2-tetrahydroperfluorodecyl) fumarate [33072-51-4] 10.08, 3-mercaptopropionic acid [107-96-0] 1.11, Et <sub>3</sub> N 0.10, and MeCCl <sub>3</sub> 44 g was heated at 65.deg. to prepare 7.7 g I.				
ST	fluoroalkyl fumarate mercaptoalkanoate condensate; carboxyalkylthiosuccinate fluoroalkyl ester; succinate carboxyalkylthio fluoroalkyl ester; <b>oil repellent</b> fluorocarbon ester; <b>water repellent</b> fluorocarbon ester				
IT	Esters, preparation RL: PREP (Preparation) (bis(fluoroalkyl) (carboxyalkylthio) fumarates)				
IT	<b>Waterproofing</b> (fluorine-containing compds. for)				
IT	Addition reaction (of bis(fluoroalkyl) fumarates with mercaptoalkanoic acids)				
IT	2-Butenedioic acid (E)-, fluoroalkyl esters, reaction products with mercaptoalkanoic acids Acetic acid, mercapto-, reaction products with bis(fluoroalkyl) fumarates Butanedioic acid, mercapto-, reaction products with bis(fluoroalkyl) fumarates Propanoic acid, 3-mercapto-, reaction products with bis(fluoroalkyl) fumarates RL: PREP (Preparation) (preparation of)				
IT	52978-12-8P 52978-13-9P 52978-14-0P 52978-15-1P 52978-16-2P 52978-17-3P 52978-18-4P 53051-36-8P 53187-17-0P RL: PREP (Preparation) (preparation of)				
IT	6380-71-8 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with bis(fluoroalkyl) fumarates)				
IT	33072-51-4 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with mercaptoalkanoic acids)				
IT	352-28-3 24120-18-1 24120-21-6 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with mercaptopropionic acid)				
IT	29420-09-5 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with mercaptosuccinic acid)				
IT	52978-12-8P 52978-13-9P 52978-14-0P 52978-15-1P 52978-18-4P 53051-36-8P				

**53187-17-0P**

RL: PREP (Preparation)  
(preparation of)

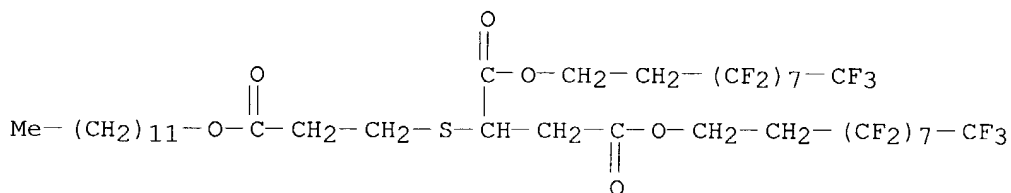
RN 52978-12-8 HCAPLUS

CN Butanedioic acid, [(tetrahydro-2,5-dioxo-3-furanyl)thio]-,  
bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
(CA INDEX NAME)



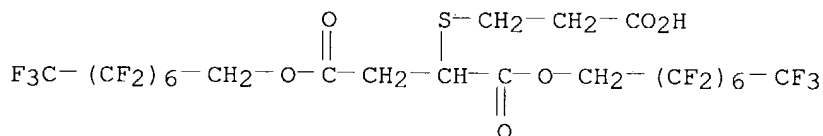
RN 52978-13-9 HCAPLUS

CN Butanedioic acid, [[3-(dodecyloxy)-3-oxopropyl]thio]-,  
bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
(CA INDEX NAME)



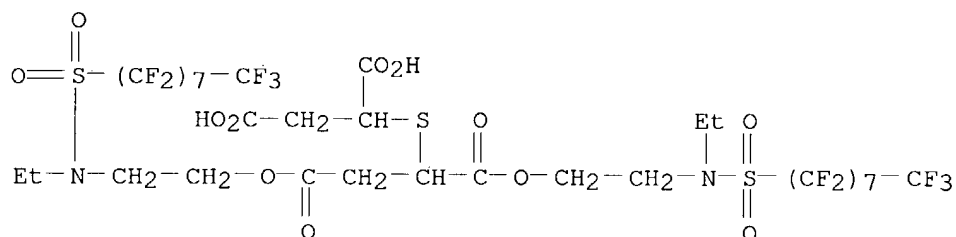
RN 52978-14-0 HCAPLUS

CN Butanedioic acid, [(2-carboxyethyl)thio]-, 1,4-  
bis(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctyl) ester (9CI) (CA  
INDEX NAME)



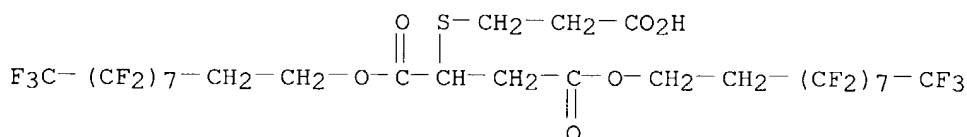
RN 52978-15-1 HCAPLUS

CN 7-Oxa-3,11-dithia-10-azanonadecane-1,2,4-tricarboxylic acid,  
10-ethyl-12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,19-  
heptafluoro-6-oxo-, 4-[2-[ethyl[(heptafluorooctyl)sulfonyl]amino]e  
thyl] ester, 11,11-dioxide (9CI) (CA INDEX NAME)



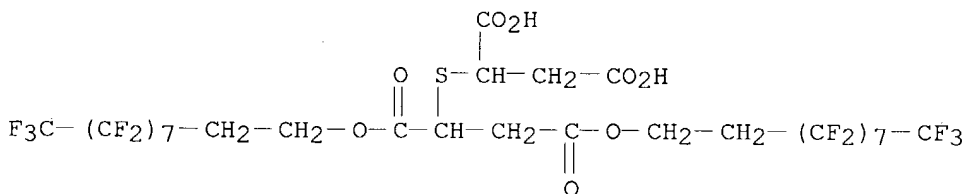
RN 52978-18-4 HCAPLUS

CN Butanedioic acid, [(2-carboxyethyl)thio]-, 1,4-bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
(CA INDEX NAME)



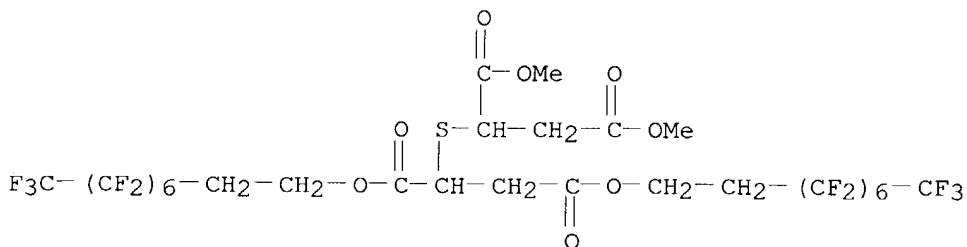
RN 53051-36-8 HCAPLUS

CN Butanedioic acid, [(1,2-dicarboxyethyl)thio]-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
(CA INDEX NAME)



RN 53187-17-0 HCAPLUS

CN Butanedioic acid, [[3-methoxy-1-(methoxycarbonyl)-3-oxopropyl]thio]-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-pentafluorononyl) ester (9CI) (CA INDEX NAME)



L26 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

AN 1974:553045 HCAPLUS  
 DN 81:153045  
 ED Entered STN: 12 May 1984  
 TI Perfluoroalkyl alcohols  
 IN Kleiner, Eduard K.; Falk, Robert A.  
 PA Ciba-Geigy A.-G.  
 SO Ger. Offen., 43 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 IC C07C  
 CC 35-2 (Synthetic High Polymers)  
 Section cross-reference(s): 23

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2338382	A1	19740228	DE 1973-2338382	19730728
PRAI	US 1972-281084		19720816		
AB	2-[1,2-Bis(1,1,2,2-tetrahydroperfluorodecoxycarbonyl)ethylthio]ethanol (I) [53027-85-3], RCH <sub>2</sub> CH <sub>2</sub> O <sub>2</sub> CCH(CH <sub>2</sub> CO <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> R <sub>1</sub> )SCH <sub>2</sub> CH <sub>2</sub> OH (R and R <sub>1</sub> = C <sub>6</sub> F <sub>13</sub> -C <sub>8</sub> F <sub>17</sub> -C <sub>10</sub> F <sub>21</sub> mixture), 1,3-bis[1,2-bis(1,1,2,2-tetrahydroperfluorodecoxycarbonyl)ethylthio]-2-propanol [52978-19-5], and 9 similar alcs., useful as <b>oil-</b> and <b>water-repellent</b> finishes for textiles, etc., were prepared from bis(fluoroalkyl) fumarates and 2-mercaptoethanol [60-24-2], 1,3-dimercapto-2-propanol [584-04-3], 1,4-dimercapto-2,3-butanediol [7634-42-6], Dion DPM-3-800-LC (polymercaptan) [53027-87-5], or a similar compound. Thus, 0.005 mole bis(1,1,2,2-tetrahydroperfluorodecyl) fumarate [33072-51-4], 0.005 mole HSCH <sub>2</sub> CH <sub>2</sub> OH, 0.1 g Et <sub>3</sub> N, and 15 g MeCCl <sub>3</sub> were heated at 60.deg. to prepare 3.3 g I.				
ST	fluoroalkyl fumarate mercaptoalkanol condensate; hydroxyalkylthiosuccinate fluoroalkyl ester; succinate hydroxyalkylthio fluoroalkyl ester; <b>oil repellent</b> fluorocarbon ester; <b>water repellent</b> fluorocarbon ester; textile <b>oil water repellent</b>				
IT	Alcohols, preparation Esters, preparation RL: PREP (Preparation) (bis(fluoroalkyl) (hydroxyalkylthio) fumarates)				
IT	<b>Waterproofing</b> (fluorine-containing compds. for)				
IT	Addition reaction (of bis(fluoroalkyl) fumarates with mercaptoalkanols)				
IT	Textiles ( <b>oil-</b> and <b>water-repellent</b> , fluorine-containing compds. for)				
IT	1,2-Propanediol, 3-mercapto-, reaction products with bis(fluoroalkyl) fumarates 2,3-Butanediol, 1,4-dimercapto-, reaction products with bis(fluoroalkyl) fumarates 2-Butenedioic acid (E)-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester, reaction products with mercaptoalkanols 2-Butenedioic acid (E)-, fluoroalkyl esters, reaction products with mercaptoalkanols Dion DPM 1002, reaction products with bis(fluoroalkyl) fumarates Dion DPM 3-800LC, reaction products with bis(fluoroalkyl) fumarates Dion DPM 5-1300, reaction products with bis(fluoroalkyl) fumarates Ethanol, 2-mercapto-, reaction products with bis(fluoroalkyl) fumarates				

RL: PREP (Preparation)  
(preparation of)

IT 52978-19-5P 52978-20-8P 52978-21-9P  
52978-22-0P 53187-16-9P  
RL: PREP (Preparation)  
(preparation of)

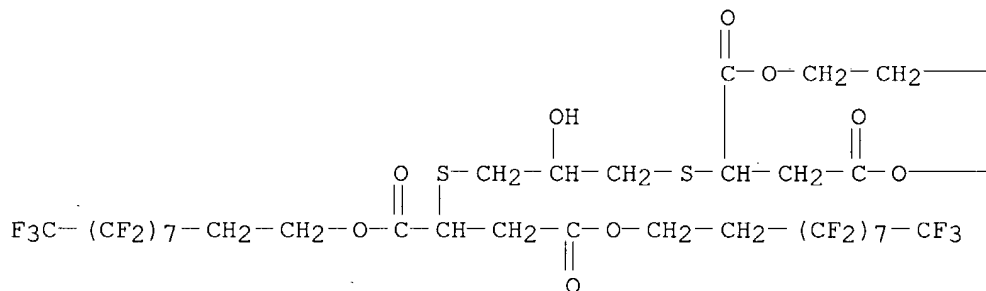
IT 584-04-3 52978-23-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(fluoroalkyl) fumarates)

IT 29420-09-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with mercaptoethanol)

IT 52978-19-5P 52978-20-8P 52978-21-9P  
52978-22-0P 53187-16-9P  
RL: PREP (Preparation)  
(preparation of)

RN 52978-19-5 HCAPLUS  
CN Butanedioic acid, 2,2'-[(2-hydroxy-1,3-propanediyl)bis(thio)]bis-,  
tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester  
(9CI) (CA INDEX NAME)

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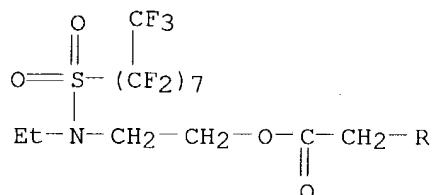
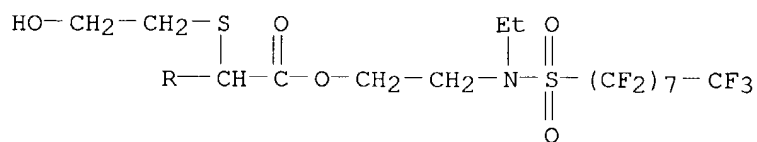
PAGE 1-B

--- (CF<sub>2</sub>)<sub>7</sub> - CF<sub>3</sub>

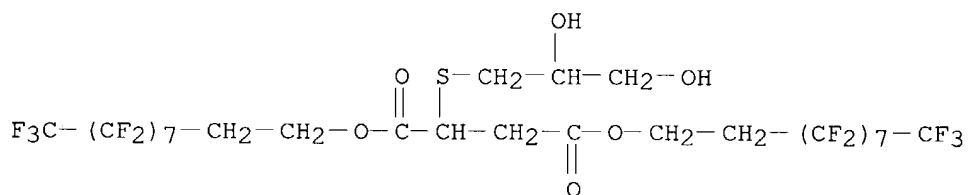
--- CH<sub>2</sub> - CH<sub>2</sub> - (CF<sub>2</sub>)<sub>7</sub> - CF<sub>3</sub>

RN 52978-20-8 HCAPLUS  
CN Butanedioic acid, [(2-hydroxyethyl)thio]-, bis[2-  
[ethyl[(heptafluorooctyl)sulfonyl]amino]ethyl] ester (9CI) (CA INDEX  
NAME)



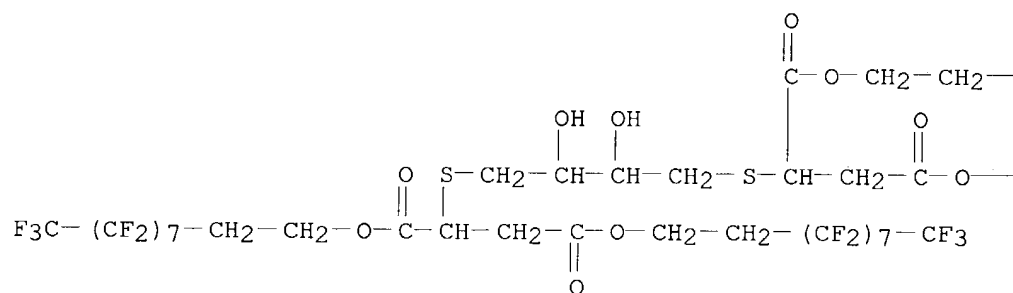


RN 52978-21-9 HCAPLUS  
 CN Butanedioic acid, [(2,3-dihydroxypropyl)thio]-,  
 bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
 (CA INDEX NAME)



RN 52978-22-0 HCAPLUS  
 CN Butanedioic acid, 2,2'-[(2,3-dihydroxy-1,4-butanediyl)bis(thio)]bis-,  
 tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester  
 (9CI) (CA INDEX NAME)

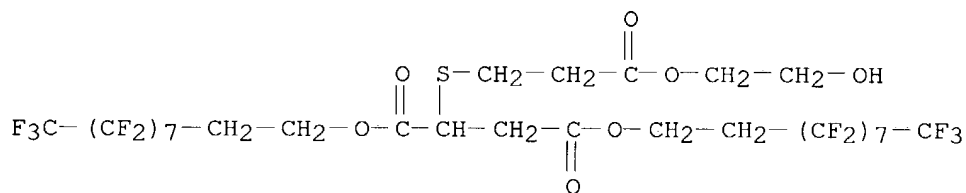
PAGE 1-A



PAGE 1-B

— (CF<sub>2</sub>)<sub>7</sub>—CF<sub>3</sub>—CH<sub>2</sub>—CH<sub>2</sub>— (CF<sub>2</sub>)<sub>7</sub>—CF<sub>3</sub>

RN 53187-16-9 HCAPLUS  
 CN Butanedioic acid, [[3-(2-hydroxyethoxy)-3-oxopropyl]thio]-,  
 bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI)  
 (CA INDEX NAME)



L26 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1973:454841 HCAPLUS  
 DN 79:54841  
 ED Entered STN: 12 May 1984  
 TI Perfluoroalkyl group-containing mercaptans and sulfides  
 IN Falk, Robert A.; Kleiner, Eduard K.  
 PA Ciba-Geigy A.-G.  
 SO Ger. Offen., 71 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 IC C07C; D06M  
 CC 39-10 (Textiles)  
 Section cross-reference(s): 23, 25

FAN.CNT 2

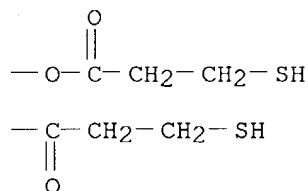
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2253051	A1	19730524	DE 1972-2253051	19721028
	US 3886201	A	19750527	US 1971-199715	19711117
	ZA 7207711	A	19730725	ZA 1972-7711	19721031
	AU 7248461	A1	19740502	AU 1972-48461	19721102
	GB 1411614	A	19751029	GB 1972-51324	19721107
	FR 2165877	A1	19730810	FR 1972-40551	19721115
	IT 973549	A	19740610	IT 1972-54021	19721115
	BE 791446	A1	19730516	BE 1972-124202	19721116
	NL 7215531	A	19730521	NL 1972-15531	19721116
	JP 48061419	A2	19730828	JP 1972-114912	19721117
	FR 2204621	A1	19740524	FR 1973-40506	19731114
PRAI	US 1971-199715		19711117		
	US 1971-199791		19711117		
AB	Reaction of a mercaptan containing .geq.1 SH groups with a fluoroalkyl				

fumarate gave the title sulfides and reaction of thiomalonic acid [70-49-5] with 1,1,2,2-tetrahydroperfluorodecyl acetate [37858-04-1] gave bis(1,1,2,2-tetrahydroperfluorodecyl) mercaptosuccinate [41395-79-3]. The title compds. (24 used) were useful as **oil and water repellents** for cotton and Dacron fabrics. Thus, MeCCl<sub>3</sub> containing bis(1,1,2,2-tetrahydroperfluorodecyl) fumarate [33072-51-4], butanedithiol [1191-08-8], and Et<sub>3</sub>N was heated 24 hr at 60.deg. to give 75% tetrakis(1,1,2,2-tetrahydroperfluorodecyl) (tetramethylenedisthio)disuccinate (I) [41395-81-7], m. 60-1.deg.. Dacron fabric treated with a 3% solution of I (containing 60.68% F) in MeCCl<sub>3</sub> exhibited an **oil repellency** rating of 6 [on a scale of 1 (min.)-8(maximum)] in AATCC test 118-1966T and a **water repellency** rating of 0 [on a scale of 0(min.)-100(maximum)] in AATCC test 22-1966 with 0.2% F on the fabric.

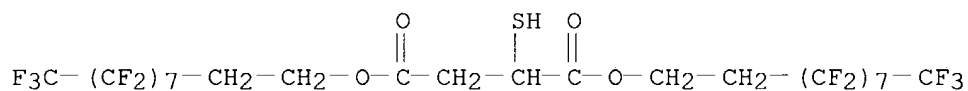
- ST fluoroalkyl thiosuccinate **soil repellent; oil repellency** fabric; **water repellency** fabric; Dacron fabric **soil repellency**; cotton fabric **soil repellency**; mercaptosuccinate fluoroalkyl **soil repellent; sulfide soil repellent**
- IT Oils  
RL: USES (Uses)  
(-proofing, of textiles, perfluoroalkyl alkylthiosuccinates as agents for)
- IT Textiles  
(cotton, oil- and **waterproofing** agents for, perfluoroalkyl alkylthiosuccinates as)
- IT **Waterproofing**  
(of textiles, perfluoroalkyl (alkylthio) succinates as agents for)
- IT Polyester fibers  
RL: USES (Uses)  
(oil- and **waterproofing** agents for, perfluoroalkyl alkylthiosuccinates as)
- IT 24120-18-1 33072-51-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with mercaptans)
- IT 111-88-6 2885-00-9 25359-71-1 34143-74-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with perfluoroalkyl fumarate)
- IT 1191-08-8 3570-55-6 3695-77-0 7575-23-7 10312-58-0 22504-50-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with perfluoroalkyl fumarates)
- IT 70-49-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with tetrahydroperfluorodecyl acetate)
- IT 29420-09-5 43030-39-3 43030-40-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with tetrahydroperfluorodecylmercaptan)
- IT 37858-04-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with thiosuccinic acid)
- IT 39466-57-4 39466-58-5 41395-79-3 41395-81-7  
42941-36-6 42941-37-7 42941-38-8 42941-39-9  
42941-40-2 42941-41-3 42941-42-4  
42941-43-5 43030-37-1 43030-38-2  
43193-00-6  
RL: USES (Uses)  
(**soil repellents**, for textiles)
- IT 39466-58-5 41395-79-3 41395-81-7



PAGE 1-B

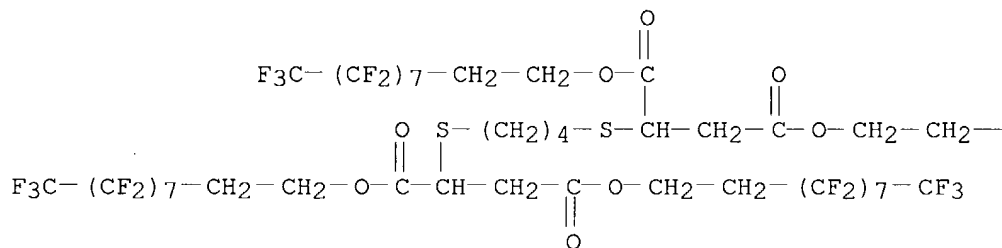


RN 41395-79-3 HCAPLUS  
CN Butanedioic acid, mercapto-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)

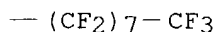


RN 41395-81-7 HCAPLUS  
CN Butanedioic acid, 2,2'-[1,4-butanediylbis(thio)]bis-, tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)

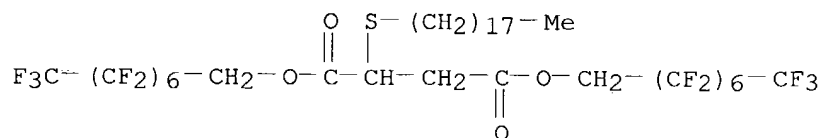
PAGE 1-A



PAGE 1-B

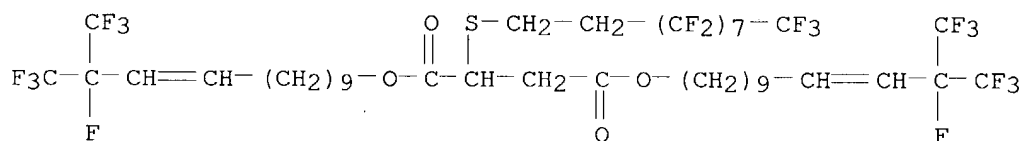


RN 42941-36-6 HCAPLUS  
CN Butanedioic acid, (octadecylthio)-, bis(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentafluorooctyl) ester (9CI) (CA INDEX NAME)



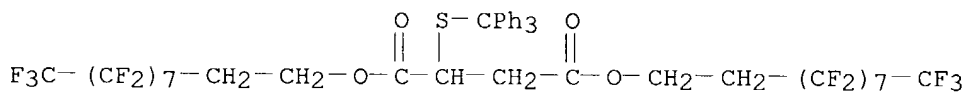
RN 42941-38-8 HCAPLUS

CN Butanedioic acid, [(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)thio]-, bis[12,13,13,13-tetrafluoro-12-(trifluoromethyl)-10-tridecenyl] ester (9CI) (CA INDEX NAME)



RN 42941-39-9 HCAPLUS

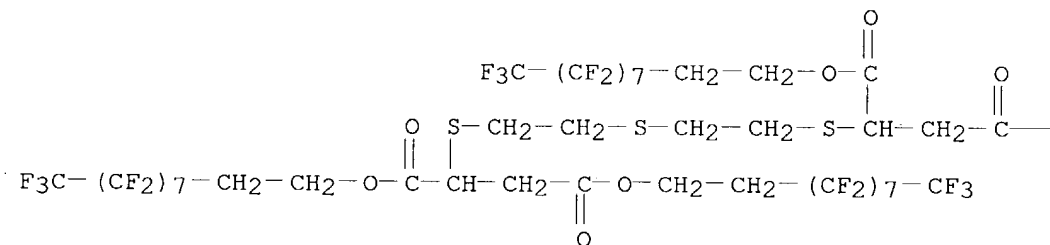
CN Butanedioic acid, [(triphenylmethyl)thio]-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)



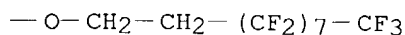
RN 42941-40-2 HCAPLUS

CN Butanedioic acid, 2,2'-[thiobis(2,1-ethanediylthio)]bis-, tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

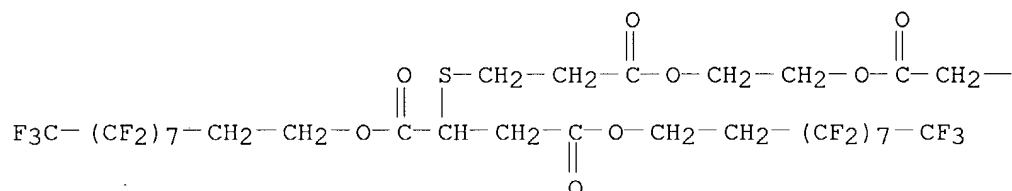


PAGE 1-B

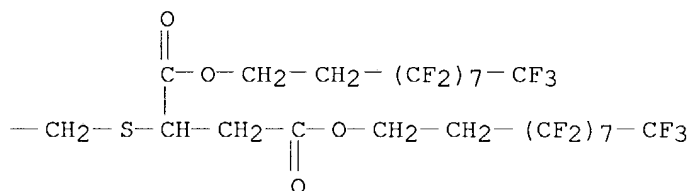


RN 42941-41-3 HCAPLUS  
 CN 7,10-Dioxa-3,14-dithiahexadecane-1,2,15,16-tetracarboxylic acid,  
 6,11-dioxo-, tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-  
 heptafluorodecyl) ester (9CI) (CA INDEX NAME)

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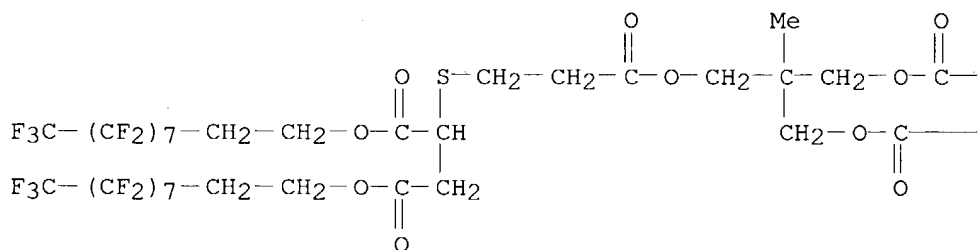


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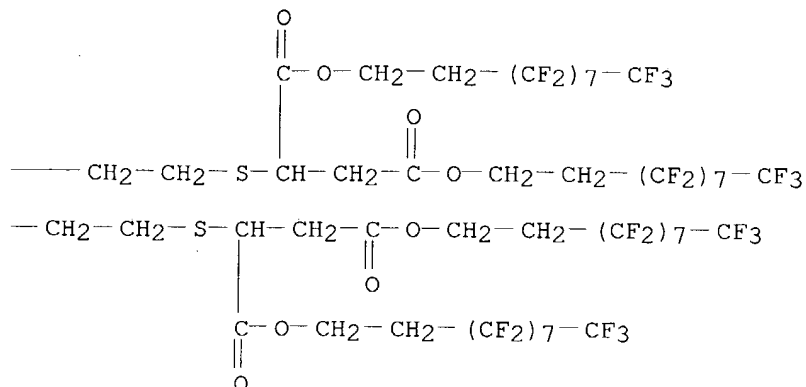


RN 42941-42-4 HCAPLUS  
 CN 7,10-Dioxa-13,15-dithiaheptadecane-1,2,16,17-tetracarboxylic acid,  
 9-[[[3-[[3-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)oxy]-  
 1-[[[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)oxy]carbonyl]-  
 1]-3-oxopropyl]thio]-1-oxopropoxy]methyl]-9-methyl-6,12-dioxo-,  
 tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester  
 (9CI) (CA INDEX NAME)

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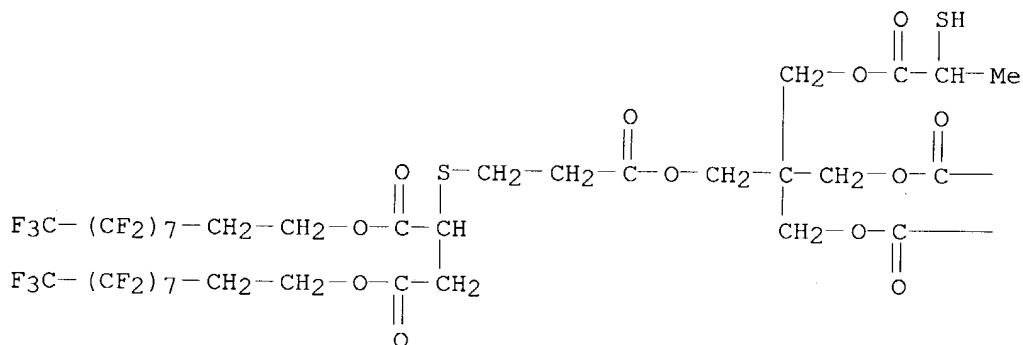


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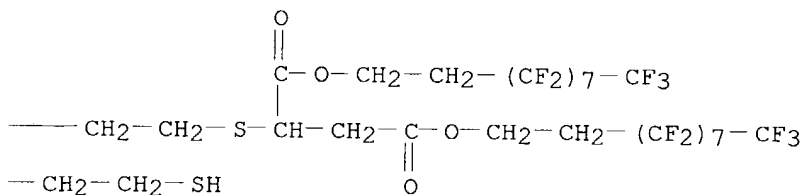


RN 42941-43-5 HCAPLUS  
 CN 7,10-Dioxo-13,15-dithiaheptadecane-1,2,16,17-tetracarboxylic acid,  
 9,9-bis[(3-mercapto-1-oxopropoxy)methyl]-6,12-dioxo-,  
 tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester  
 (9CI) (CA INDEX NAME)

PAGE 1-A

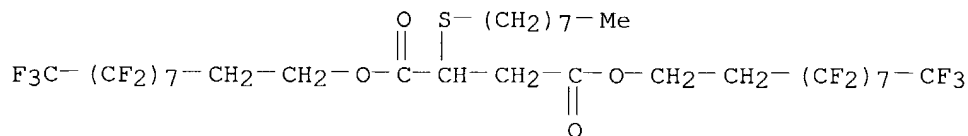


PAGE 1-B



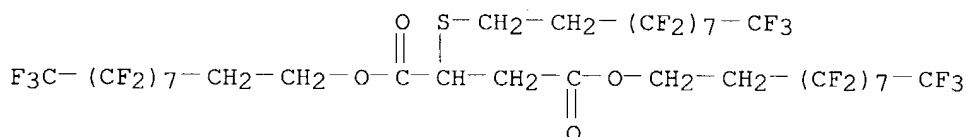
RN 43030-37-1 HCAPLUS  
 CN Butanedioic acid, (octylthio)-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-  
 heptafluorodecyl) ester (9CI) (CA INDEX NAME)





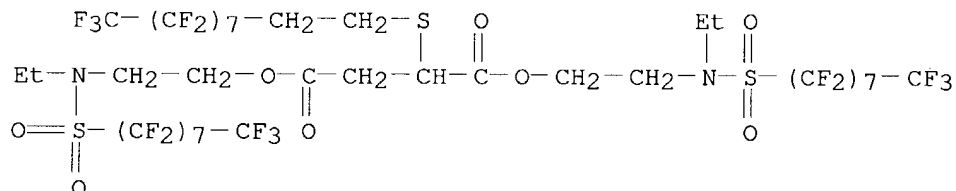
RN 43030-38-2 HCAPLUS

CN Butanedioic acid, [(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl) ester (9CI) (CA INDEX NAME)



RN 43193-00-6 HCAPLUS

CN Butanedioic acid, [(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)thio]-, bis[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl] ester (9CI) (CA INDEX NAME)



L26 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1973:454840 HCAPLUS

DN 79:54840

ED Entered STN: 12 May 1984

TI Free radical polymerization using perfluoroalkyl group-containing mercaptans as chain-transfer agents

IN Falk, Robert A.; Kleiner, Eduard

PA Ciba-Geigy A.-G.

SO Ger. Offen., 74 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C08F

CC 39-10 (Textiles)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2253004	A1	19730524	DE 1972-2253004	19721028
	US 3758447	A	19730911	US 1971-199791	19711117
	CA 989999	A1	19760525	CA 1972-154962	19721027
	AU 7248461	A1	19740502	AU 1972-48461	19721102

CH 7216129	A4	19740930	CH 1972-16129	19721106
CH 561810	B	19750515		
GB 1411614	A	19751029	GB 1972-51324	19721107
IT 973549	A	19740610	IT 1972-54021	19721115
BE 791446	A1	19730516	BE 1972-124202	19721116
NL 7215532	A	19730521	NL 1972-15532	19721116
AT 319595	B	19741227	AT 1972-9745	19721116
CS 161967	P	19750610	CS 1972-7774	19721116
JP 48062879	A2	19730901	JP 1972-114913	19721117
BR 7208094	A0	19730925	BR 1972-8094	19721117
FR 2204621	A1	19740524	FR 1973-40506	19731114
PRAI US 1971-199791		19711117		
US 1971-199715		19711117		

AB Polymers with low surface tension, especially useful as **antisoiling** finishes for textiles, consisted of (RfACHR3CR1R2S)mB[S(M)q]nH or (RfACHR3CR1R2S)(M)qH, R1, R2, R3 = H, Me, RfA, RfACH2 with .geq.1 of R1, R2, R3 = RfA or RfACH2; Rf = perfluoroalkyl; A = a group of the type (CH2)kCO2, k = 0-10; B = combining atom or group, e. g., C; m = 0-10; n = 1-9; M = monomeric group; q = >1. The polymers were prepared by polymerizing the

monomer in the presence of a perfluorogroup-containing mercaptan chain-transfer agent, such as RfACHR3CR1R2SH. Thus, 10 parts 2:10 mercaptan chain-transfer agent [C8F17CH2CH2O2CH(SH)CH2CO2CH2CH2C8F17] [ **41395-79-3**] - Me methacrylate (I) [80-62-6] mixture, 0.5% azobisisobutyronitrile (on weight I) and 20 parts EtOAc were polymerized for 16 hr at 70.deg. to give a product containing 0.85% F, number-average mol. weight 6815, and

critical surface tension 14.3 dynes/cm compared with 39.0 dynes/cm for a sample similarly prepared but using no mercaptan chain-transfer agent.

ST mercaptan chain transfer agent; polymethacrylate mercaptan capped; textile finish soil resistants; perfluoroalkyl mercaptan transfer agent

IT Polyester fibers

RL: USES (Uses)

(**antisoiling** agents for, fluorinated mercapto compds.-methacrylate polymers as)

IT Textiles

(cotton, **antisoiling** agents for, fluorinated mercapto compds.-methacrylate polymers as)

IT Chain-transfer agents

(fluorinated mercapto compds., for acrylic polymers)

IT 2,5-Furandione, polymer with pentaerythritol 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate 3-mercaptopropionate

2-Butenedioic acid (Z)-, diethyl ester, polymer with polyfluoroalkyl mercaptocarboxylates

2-Propenamide, N-(hydroxymethyl)-, polymer with dipentaerythritol 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate and vinylpyrrolidone

2-Propenoic acid, 2-ethylhexyl ester, polymer with polyfluoroalkyl mercaptocarboxylates

2-Propenoic acid, ethyl ester, polymer with polyfluoroalkyl mercapto carboxylates

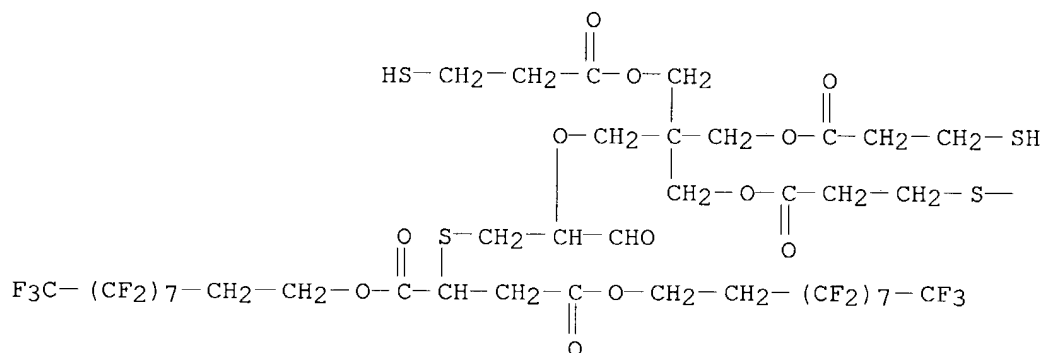
2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with alkyl methacrylates and pentaerythritol 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate 3-mercaptopropionate

2-Propenoic acid, 2-methyl-, 2-[(1,1-dimethylethyl)amino]ethyl ester, polymer with methyl methacrylate and pentaerythritol

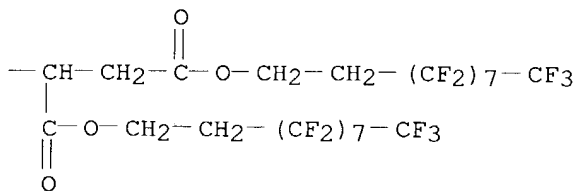
- 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with  
pentaerythritol 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propi  
onate 3-mercaptopropionate
- 2-Propenoic acid, 2-methyl-, 3-hydroxypropyl ester, polymer with  
(dimethylamino)ethyl methacrylate and pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Propenoic acid, 2-methyl-, ethyl ester, polymer with  
(dimethylamino)ethylmethacrylate and pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Propenoic acid, 2-methyl-, methyl ester, polymer with pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Pyrrolidinone, 1-ethenyl-, polymer with pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- Benzene, ethenyl-, polymer with pentaerythritol 3-[[1,2-  
bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- Butanedioic acid, [(2-carboxyethyl)thio]-, ester with 2,2-  
bis(hydroxymethyl)-1,3-propanediol 3-mercaptopropanoate,  
polyfluoroalkyl esters, polymers with acrylic monomers
- Butanedioic acid, [(2-carboxyethyl)thio]-, ester with 2,2'-  
[oxybis(methylene)]bis[2-(hydroxymethyl)-1,2-propanediol]  
3-mercaptopropanoate, polyfluoroalkyl ester, polymers with acrylic  
monomers
- Butanol, (ethenyloxy)-, polymer with polyfluoroalkyl mercaptocarboxylates  
RL: USES (Uses)  
(**antisoiling** agents, for textiles)
- IT 2-Propenoic acid, 2-methyl-, polymer with methyl methacrylate and polyol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- Ethene, methoxy-, polymer with pentaerithritol 3-[[1,2-  
bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of)
- IT 2-Butenedioic acid (E)-, diethyl ester, polymer with methyl vinyl ether  
and pentaerythritol 3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]p  
ropionate 3-mercaptopropionate
- 2-Propenamide, polymer with pentaerythritol 3-[[1,2-  
bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Propenamide, 2-methyl-, polymer with pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- 2-Propenenitrile, polymer with pentaerythritol 3-[[1,2-  
bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- Acetic acid ethenyl ester, polymer with pentaerythritol  
3-[[1,2-bis[(polyfluoroalkoxy)carbonyl]ethyl]thio]propionate  
3-mercaptopropionate
- RL: USES (Uses)  
(soil-resistant finishes, for textiles)
- IT 2157-01-9 25852-47-5

RL: USES (Uses)  
 (antisoiling agents, for textiles)  
 IT 43021-07-4  
 RL: USES (Uses)  
 (soil-resistant finishes for textiles)  
 IT 42942-62-1 42942-63-2  
 RL: USES (Uses)  
 (soil-resistant finishes, for textiles)  
 IT 43021-07-4  
 RL: USES (Uses)  
 (soil-resistant finishes for textiles)  
 RN 43021-07-4 HCAPLUS  
 CN 6,10-Dioxo-3,14-dithiahexadecane-1,2,15,16-tetracarboxylic acid,  
 5-formyl-8,8-bis[(3-mercapto-1-oxopropoxy)methyl]-11-oxo-,  
 tetrakis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester,  
 polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 49857-56-9  
 CMF C65 H48 F68 O16 S4

PAGE 1-A

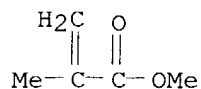


PAGE 1-B



CM 2

CRN 80-62-6  
CMF C5 H8 O2



IT **42942-62-1**

RL: USES (Uses)

(soil-resistant finishes, for textiles)

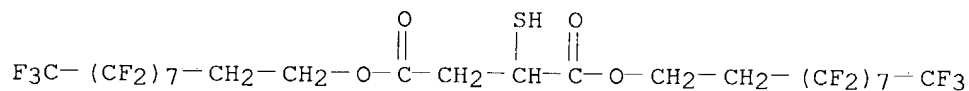
RN 42942-62-1 HCAPLUS

CN Butanedioic acid, mercapto-, bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl) ester, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 41395-79-3

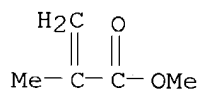
CMF C24 H12 F34 O4 S



CM 2

CRN 80-62-6

CMF C5 H8 O2



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